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THE A B C OF POTATO CULTURE.

A "TALK," SUGGESTED BY READING IT.

FRIEND ROOT:—We had so thoroughly enjoyed the writings of Mr. Terry, in the *Country Gentleman*, that, the moment we saw that his "potato-book" was "out" we sent for it. It came last evening. We found it so interesting, that, when the little girls were asleep, we "commenced over again," and read aloud to Mrs. H. Before retiring we had read it about half through. After retiring we "talked" until Mrs. H. said, "What is it keeping us awake? is it that potato-book?"

"I was just thinking the same thing," was the reply.

This morning we were up at daylight; the reading is now finished, the book sent to Mr. Heddon, with the request that, after reading it, he send it to Prof. Cook. Friend Root, you are perfectly safe in offering to "trade back" with those who think, after reading the book, that they have not got the worth of their money. What a wide-awake, *thinking* man is Mr. Terry! What a bee-keeper he would have made! What an *any thing* he would have made! Why can not each and every person in this world find some work for which he and his surroundings are specially fitted, then *stick* to this one thing, and put their whole *being* into it? The reading of this book has aroused us wonderfully. What, to become a potato-grower? Oh, no; nothing of the kind, but to try to become a better *bee-keeper*. We long ago adopted the same course as has Mr. Terry; i. e., we don't make our butter, nor keep pigs nor chickens, much to the wonderment and against the advice of many neighbors. We can raise our butter, eggs, chickens, meat, "potatoes," etc., much more easily and cheaply in the apiary.

We should not forget, however, that everybody is not constituted alike. You, friend Root, were once "crazy" to keep bees, then to raise carp, then strawberries; and after reading Mr. Terry's most excellent little work upon potato culture you are "crazy" to raise them; while the reading of it makes *us* crazy only to do something to make of bee-keeping a more safe and profitable business. The wintering trouble is the one great obstacle at present; when this is overcome (and we have full faith that it will be), then will bee-keeping become more of a specialty than ever. Features and factors that now pass unheeded will be most forcibly brought to our notice; as, for instance, the idea put forth by Mr. Heddon; viz., "How shall we exhaust the field with the least expenditure of capital and labor?" We shall learn to manipulate hives instead of frames. The Heddon method of preventing after-swarming is an illustration of our meaning. Then we shall handle apiaries as we now handle hives. Honey will be cheap? Of course, it will; but the men who are then engaged in its production will be more prosperous than at present. They can afford the machinery, fixtures, and appliances to handle several large apiaries, the same as Mr. Terry can afford expensive potato-raising machinery; and it will give them the same advantage over the bee-keeper with a few colonies that Mr. Terry has over the man who raises an acre or two of potatoes. There is *something* in which each one can excel; that, let him do. We sincerely hope,

friend Root, that you will sell thousands and thousands of this little work, although the buyers will have the best end of the bargain. We wish that every one who is now engaged in some occupation that is capable of profitably absorbing all his time, talents, and money, but is thinking of adding bees, or any thing else, to his regular occupation, with the hopes of making money thereby, might read the chapter upon "Potato-growing as a Specialty." That one chapter is, in our opinion, worth $5.00—no, it is priceless—to one who has never given the matter much thought.

The reason we sent the book to Mr. Heddon is, that he might enjoy seeing his views upon this subject (specialty) so well expressed; and we sent it to Prof. Cook because he has *opposite* views, and we hope that a perusal of this chapter might cause him to at least modify them. Prof. Cook may not be *opposed* to specialty, but we have never known him to argue as does Mr. Terry; in fact, it seems to us that he always takes a nearly opposite view.

We must not omit to mention that Mr. Terry *pays* the children for "picking bugs." How much better than *compelling* them to do unpleasant work! how much easier and more pleasant for the children! At "our house" the little girls earned nearly enough by "whacking together sections," as they call it, last winter, to buy each of them a "little red rocking-chair." His views upon raising a first-class article are exactly in accord with our own, as will be seen by comparing them with those given in our article on raising first class honey. Those who raise potatoes should get the book, and learn how to do better, or else quit the business: those who do not, should get jt as a "brain-tonic."

W. Z. HUTCHINSON.

Rogersville, Mich., May, 1885.

Why, old friend, what ails you? I was afraid to send you a copy of our book on potato culture, because I knew you were so much in favor of specialties, and I was afraid you would not want to take time to read a book all about potatoes. It did occur to me, that there were many things in it that would please you, but I had no idea that you and your wife too would drink it all in, as you seem to have done. Your concluding sentence hits the spot exactly, and it has seemed to me every time I read it, that it is good for everybody as a "brain tonic." I have thought of a hundred different friends to whom I wanted to send it, but I was afraid that they would think that I and my books were a nuisance. I do love to see these outdoor rural industries developed and unfolded, and it has sometimes almost seemed to me that the millennium was coming along this line, by having people waked up to the possibilities of these homely, every-day things all round about them. Just think of the idea—making the raising of potatoes a new industry, and the corner-stone, almost, of a new science! Yes, it struck me, too, that we bee-keepers need just such talks and teachings as friend Terry is capable of giving. The farmers of the State of Ohio, in fact, decided upon this some time ago; for they bid fair to keep him employed most of his winters in talking to the farmers of the State at our excellent farmers' institutes.

What can be more homely or commonplace than a potato? and yet how odd it seems to think of a talented and educated man making the potato his life study!

"DRY FECES."(?)

PROF. COOK IS STILL VERY DECIDED IN REGARD TO THE MATTER.

MR. EDITOR:—This "dry feces" matter is going to be a veritable "wheat into chess" controversy in apiculture. Science may kill theory so dead that there is not enough of the corpse to decently bury; yet, like Banquo's ghost, it will spring to life again, and resurrected, too, not by ignorant men, but by those whom we should expect would be too wary to be carrying about an old theory never possessing any vitality, and, moreover, killed dead time and again.

Recently I have received these "dry feces," indirectly from Mr. Cornell twice; from W. F. Clarke, James Heddon, G. M. Doolittle, etc. What are they? Mostly beeswax, often containing pollen, and frequently wood, paper, paint, indeed any thing that the bees may attack with their jaws in the attempt at removal.

Mr. Editor, did you ever try to remove—in the absence of a pocket-knife—bitter bark from a twig, or any other ill-tasting substance, with the teeth? What did you do? You spit it out, of course. Well, you may not like to be told so, but that was the exact parallel of "dry feces." You remember that bite of comb with its bitter bee-bread, and how you cast it forth with spitfire-like energy. You extruded "dry feces," not only in origin, but in very nature—wax and bee-bread.

As will be seen in the paper that I read at Lexington, Ky., before the N. A. B. K. A., I have examined this subject with glass, test-tube, and crucible, and each and every test spoke the same conclusion—rejected pellets formed by gnawing of the bees. They taste like wax, or wax and bee-bread; melt easily like wax; dissolve quickly in alcohol or ether, but not in water, are seen to be wax often containing pollen grains and miscellaneous substances, when viewed with the microscope; blaze up when put in a flame, with the odor of wax, and sometimes of burning nitrogenous substance. I have these pellets now that contain fibers of wood as long as a bee. Surely this would have been a pretty irritating cathartic.

I have dissected hundreds of bees, and dry excreta is *never* found. The real excreta of bees always breaks up readily in water—there is no wax in it—forming a yellowish or light-colored mixture. This is true if we take them even when dry and hard, after the bee has been long dead. These gnawings will never break up in water. I will tell you, Mr. Editor, where you will find these gnawings piled up quickly and high. Where a weak colony is robbed. The bees in robbing cut off the cappings, rejecting the gnawings, and the weak bees are too reduced or too occupied to carry off the chips, and so the "chips" pile up high under the combs. I have just seen such a case, and could gather a table-spoonful of gnawings just like those received from W. F. Clarke, and all made or dropped in a few hours.

Some harder darker pellets from Mr. Cornell seem like feces. I have never seen such in bees, and have never found any such under bees in winter or spring; yet that bees, like other animals, may, upon

occasion, get costive, and void impacted matter, is possible. That they do so in our best wintering is certainly not true so far as I have examined.

Let brothers Cornell, Tinker, Clarke, or any other doubting Thomas, investigate this matter fully, and he will doubt no longer. No wonder the late Mr. Quinby, and Mr. Abbott, of England, thought these feces. I felt sure, when I just trusted to my unaided eyes; but full investigation showed that I was wholly wrong. Shut bees up in summer, and these pellets will fall thick in the hive, as the bees gnaw hard on wire gauze and wood, in hopes to escape. A. J. COOK.

Agricultural College, Mich., April 25, 1885.

HELP FOR THE SUFFERERS.

SELLING BEES BY THE POUND AT LOW PRICES.

I HAVE received a shower of letters and postals, asking questions about my bees, such as these; "Have you any foul brood among your bees, and did you truly buy imported stock to breed from?" "It must be your bees are in poor condition, you advertise at so low figures." "Send me 30 swarms C. O. D.; and if the bees are all right, and have queens all right, I will keep them."

Christopher Grimm, of Jefferson, was here to see me the 4th day of May, and he went out among the bees and he said he never saw so many swarms together in such perfect condition.

And now, friend Root, this 9th day of May I send you by express one of my pure Italian swarms, daughter of the imported queen I bought of you in 1883; and what I wish of you is to examine this swarm, and pass judgment on it, and then insert a slip in GLEANINGS, as to whether they are good or poor, or whether it is worth $5.00 dollars or not; and after deducting all expense, you may give me credit for what you think they are worth, or you need not allow me any thing. I leave it to your judgment. The reason I send this swarm in this way is, it will help people to have more confidence in my honesty. I want to sell my bees, for the reason I am confined to the house with a chronic difficulty. J. R. REED.

Milford, Wis., May 9, 1885.

Friend R., I knew you would have a shower of applications, and I hope you have bees enough to fill all your orders. By the way, where advertisers offer bees below usual prices, I think it would be a good thing for them to state how many colonies they have to draw from, so that applicants may calculate what the probabilities are of their shipper being overrun with orders. In our price list we have stated that we can not send queens C. O. D. This C. O. D. is a bad business any way, for the reason that there are always more or less people who will be short of money, or change their minds when the goods get to their station. Bees are perishable property, and it is a good deal of work to put them up ready for shipment, to say nothing of express charges both ways. Certain kinds of goods can be sent C. O. D. without much difficulty, especially where there is considerable value in very small compass. A watch, for instance, may be sent to the purchaser, and he may be allowed to examine it before paying; but to think of doing the same thing with a swarm of bees is out of the question. The shipper ought to have the cash in his pocket, or an order from some good reliable man, before he even puts them up.—I am much obliged indeed, friend R., for the sample colony you shipped us, but I am sorry you thought best to take all this trouble.—In regard to the foul brood, it is understood that no man advertises bees for sale, or offers them in any other way, who has foul brood in his apiary. If any one who reads the bee-journals knows of any such thing being done, he should notify the editors at once, and have it put down.

In regard to whether the bees be Italian or hybrids: When anybody buys bees by the pound at half the usual price, or less, he certainly ought not to ask whether they are blacks, hybrids, or Italians; and, in fact, at this season of the year, when bees by the pound are bought for building up colonies, it does not make any great difference what race of bees they are, for the queen will fix the purity of the colony in a very short time herself. We have nothing but pure Italians in our apiary, and do not expect to send out any other kind of bees by the pound; but our prices are very much higher than what you put them, friend R.

Later.—The bees are at hand, and we call them fine Italians, and worth a good deal more at this present crisis and season than what friend Reed advertises them for.

TOBACCO COLUMN.

GIVING UP TOBACCO AFTER USING IT FOR FORTY YEARS; WHAT A LITTLE GIRL CAN DO.

MY pa takes GLEANINGS, and he keeps bees. He has 48 colonies. He has been feeding waste honey, but he carries it about three hundred yards away from his apiary, to prevent robbing. We live on a farm. I go to school, and like my teacher very much. Grandpa and grandma live with us. Grandpa has used tobacco for forty years, but has not used any now for three months, and says he is not going to use it any more. Don't you think he deserves a smoker? I am going to have my flower-garden close by the bees this summer. I have already set some honeysuckles and jasmine to make shade for them. We had lots of honey-dew honey last year. I do not like it. I am starting some watermelon-plants for early use. I fill an egg-shell, and place the shells in a box of dirt; and when they are nicely up, loosen the shell from the dirt, and transplant to the garden, without disturbing the roots. They will not stop growing. MAY SIGLE, age 12.

Butler, Bates Co., Mo., April 19, 1885.

To be sure, your grandfather ought to have a smoker, friend May, and I am very glad of the opportunity of sending him one.—Your idea of starting watermelons is a real good one. We have been at work on the same thing with thin paper boxes, but the weather has been so cold we could not set them out, and our melon-plants got pot-bound.

I am just commencing in bee-keeping, and I learned from Mr. Wood Trenor that you would give any one a smoker who would quit chewing tobacco, and I will say this: If you will send me one I will

quit; and if I do not, I will send you the money for it. DOCK CONNOR.

Madisonville, Texas.

Friend C., the smoker was sent you some time ago; but we now notice that you use the expression *quit chewing*. In offering a smoker I always use the term *using* tobacco; for I can not see that it makes any difference whether one chews or smokes—it is all tobacco-using. Now, if you did not mean that you would give up the use of tobacco in every form or shape, we trust you will be gentlemanly enough to return the smoker, or pay for it.

I have quit chewing tobacco; chewed only three years. It would kill me to chew three years more. If you think you can give me a smoker, send one. If you can't give one, send one by mail, and I will send you the money. J. G. MILLS.

Moulton, Texas, Jan., 1885.

Friend M., there will be no charge for the smoker, providing you give up the use of tobacco in every shape and manner, as mentioned above.

I have used tobacco for several years. On Jan. 1 I resolved to abandon it, and threw away my pipe, and kept good my resolve so far. If your offer of a smoker is yet extant, please send me one. I wish it as a reminder of my promise; and should I fail, I will pay for it, and send you a new name for GLEANINGS besides. The battle will be hard, but I mean to win it, asking God to help me.

Dahlgren, Ill. F. C. VANDERVORT.

I am (or, rather, *have been*) a tobacco-smoker for ten years. I have often thought I would quit using the filthy weed, and at last made up my mind that, with God's help, I would stop. If I am entitled to a smoker, you may send me one. If I commence using tobacco again, I will pay you for two. Not many bees in this part of the country, but what there are do well. Honey sells for 20 cents per lb. for extracted, and 25 cents for comb honey.

Hepler, Kansas. M. A. TIMBERMAN.

FROM A BROTHER WHO PREFERS TO PAY FOR HIS SMOKER, SO IT WILL NOT BE ANY MORE A REMINDER.

I was out yesterday, although the mercury was at zero, and sold a few pails of honey; and by borrowing some I am able to inclose $6.00, which please find. After squaring my account you will take the rest to pay for that tobacco-smoker I had of you. I find that it is more of a reminder of the fact that I have received your goods without paying for them than any thing else, and now I do not feel that I have taken something for nothing.

Carlton, Mich. J. S. COLE.

Friend C., we thank you for paying for the smoker, but we hope it is not because you have gone back to tobacco again. It looks a little that way, although you do not say so.

A BROTHER WHO FEELS HE NEEDS OUR PRAYERS.

This is the first time I have addressed you. I have had a hard battle with tobacco since Christmas. Will you pray for me, that I may be fully able to abstain for ever, God being my helper?

Summersville, Pa. ISAAC A. CLARK.

Most surely I will, brother C.; and may the kind Father help, strengthen, and sustain you.

ANOTHER VOLUNTEER.

I think I will lay claim to one of your smokers. I thought I would quit using tobacco before asking you for one. I have a swarm of bees, and I am also running a potato-ranch, and I am all alone; so if you will send me a smoker I will pay you for it, if I use tobacco in any shape or any form.

WM. HILDERBRAND.

San Bernardino, Cal., Oct. 19, 1884.

My daughter's husband is a young man 24 years of age; he is going to try bee-keeping. He has barrowed GLEANINGS to read. He likes it very much, and is going to take it this year. I have been trying to have him break off smoking. He says he will not smoke again if I will write for a bee-smoker. If you think it worth while to send him one, if he smokes I will send you the money for it. This is from a great tobacco-hater. MRS. H. N. FOSTER.

Richford, Vt., Dec. 16, 1884.

I used tobacco 28 years. Over four years ago I quit, and have in no way used any since GLEANINGS reminded me every number, till at last I overcame the habit. If you think I deserve a smoker, send one to me. ISAAC EBY.

New Germantown, Pa.

I have given up tobacco. Please send smoker. I will pay you for it if I take up the habit again.

Gonzales, Texas, Feb. 23, 1885. M. BROERS.

FROM A FLORIDA FRIEND.

If I again return to the use of the weed I'll consider myself your debtor for the price of the smoker. T. C. WAUGH.

San Antonio, Florida, Nov 29, 1884.

I would say in regard to tobacco, that I have quit chewing and smoking, although never an habitual smoker or chewer. CHAS. BLATHERWICK.

Bryan, Texas.

I happened to see where you promise a Clark's smoker, or give it as a reward to all who abandon the use of tobacco. This I have done, after using it 24 years. If I am entitled to the smoker, please send and oblige. R. F. CARY.

Poca, Putnam Co., W. Va.

Bro. Richard Henderson, close by me, has been moved to quit using tobacco; says it is a fight, but is determined never to use it again. I told him of your plan. Should you see fit to send him a smoker, send it to Richard Henderson, Benton Ridge, O.

Stanley, Ohio. S. H. BOLTON.

Three months ago I laid tobacco aside, after being its slave 20 years. I promise that, if I ever break over and rob the tobacco-worm of his rations in any form I will pay you $1.00 for the same. I have five stands of bees in good condition. I like the L. frame the best. WILLIAM DUCKWORTH.

Greenwood, W. Va., April 22, 1885.

FOR JESUS' SAKE.

My father is 57 years old, and has quit tobacco after having used it 45 years. He quit it for *Jesus' sake*. W. D. GILLILAND.

Abatis, Mo., March 11, 1885.

For Jesus' sake! That is the last item on this page, dear friends; but, does it not sum it all up? Not only this little page of print, but these pages of our life, the lives that you and I are living?

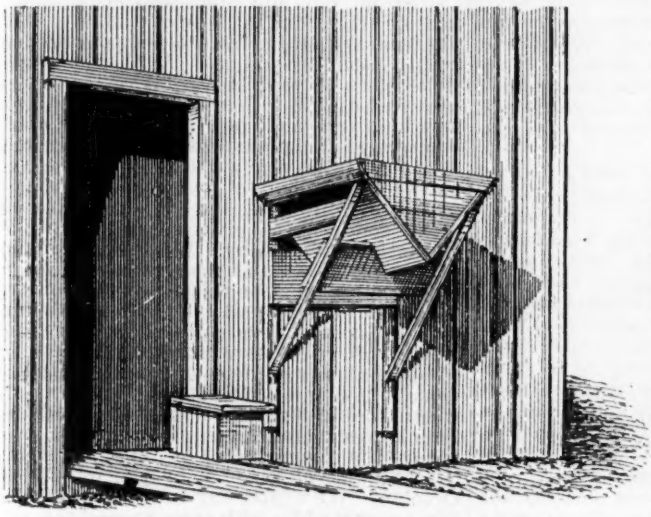
THE CALIFORNIA SUN-STRAINER.

A CHEAP WAY OF MAKING AN AUTOMATIC ARRANGEMENT FOR RENDERING WAX.

THE following, from the pen of friend Muth-Rasmussen, whose portrait we gave on page 193, we have taken from the *Pacific Rural Press*.

As I have never seen it mentioned in print, I will here give a description of this valuable apparatus, which ought to be found in every apiary in the land.

The sun-strainer is a triangular box, something like a corner cupboard laid down on its back edge. It is lined with tin, and covered with one or more window-sashes. A sun-strainer, covered with a sash of six 10x16 lights, is large enough for an apiary of 100 colonies, run for extracted honey. This sash should fit bee-tight, to prevent bees from crowding in, which will invariably result in their death, as either the heat will kill them, or they will worry themselves to death trying to get out through the glass. About half way between the cover and bottom edge is placed a strainer-plate, made of sheets of tin, perforated with $\frac{1}{8}$-inch holes, three-quarters of an inch apart, and fastened to a light wooden frame under the tin. Wire-cloth should not be used for the strainer-plate, as it is difficult to



THE CALIFORNIA SUN HONEY-STRAINER.

clean, and easily gets clogged or broken. A semi-circular handle is soldered to each end of the strainer-plate. Underneath is placed four little tin brackets, soldered to the vertical ends of the sun-strainer, two at each end, to prevent the strainer-plate from tilting sidewise. In one of the ends of the sun-strainer, and as near the bottom as possible, is soldered a 1½-inch tube, four inches long. Another tube of the same diameter, a foot or more long, telescopes over the short tube, and goes through a hole in the wall into the honey-room. Some place the sun-strainer in a scaffold, standing apart from the house, but it is better to have it resting in a frame bolted to the south side of the honey-house, where the sun will strike it nearly all day. The sash should be hinged over the tube so that when it is raised it rests against the wall, where it may be fastened by a hook or other device.

USE OF THE SUN-STRAINER.

When the cappings have been drained sufficiently, they are placed on the strainer-plate, and the sun-strainer closed. The heat of the sun melts the cappings, and as soon as the wax gets below the strainer-plate it cools and forms a solid cake. The wax never gets overheated in this way. When made from new white cappings, it will always be of a bright yellow color. What little honey adheres to the cappings goes through the tube into the honey-room, where it is collected in a can or separate tank. The sun-strainer should therefore have a slight inclination toward the house, that the honey may flow freely and not remain standing between the different layers of wax formed, as more cappings are added from day to day. The honey will be slightly darker than the extracted honey, and should be kept separate, to be either sold as a darker grade or kept for stimulating or feeding the bees. It will be a good policy to keep on hand half a ton or more of such honey, as it may save the bees from starvation during one of our not unfrequent dry seasons.

Most of the refuse will remain on top of the strainer-plate, from which it can easily be scraped off, while it is warm. If the plate becomes clogged, the holes may be opened with a carpenter's compass or similar tool. This should be done when the plate is cold. The wax should be cut out with wooden paddles, choosing a time when the wax is tolerably soft. Never use a metallic tool for this purpose, as it is liable to cut the tin lining, and it is almost impossible to mend such an injury after the tin has been coated over with wax. In very hot weather some of the wax will run through the tube and partly fill it. When the sun-strainer has been emptied, the extension tube should be taken off and the wax pulled out of it. If the wax sticks, the tube may be laid in water, which will dissolve the honey and loosen the wax. The wax is then placed in a tub of water and afterward re-melted. It is hardly necessary to say, that the glass should be kept bright, clean, and free from dust, in order to have the best effect. The sun-strainer should be housed during the winter, but the frame may be left in its place all the year round.

ANOTHER STYLE OF SUN-STRAINER

Is built fast to the wall, has a sloping glass cover, and, under this, a close-fitting shutter, hinged at the top. Through the hole in the wall, closed by this shutter, the sun-strainer may be filled and emptied from the inside of the honey-room. This is an advantage when bees are inclined to rob.

FORMER USE OF THE SUN-STRAINER.

When I first learned the bee-business, extractors were not known on the Pacific Coast, and, as far as I know, I was one of the first, if not the first bee-keeper in California, who imported an extractor from "the States." It was my old friend and benefactor, Mr. Thomas A. Garey, of Los Angeles, who drew my attention to the advertisement of an extractor in the *American Bee Journal*, specimen copies of which were occasionally sent him; and to him justly belongs the honor of the first introduction of the honey-extractor into Southern California. Previous to that event, all honey not sold as comb honey was *strained* by means of the sun-strainer. The sun-strainers were, therefore, then of necessity very large, the one with which I first worked being 7 feet 6 inches long, and covered with a heavy door of glass. It had a melting capacity of a ton a day in hot weather. As all the honey was thus strained, the term "strained honey" became fixed in the minds of the public, and has been slow to give way to the newer term, "extracted honey." All the honey-comb was, of course, melted up with the honey, the whole as it was cut out of the supers being dumped into the sun-strainer in a promiscuous mass, and an immense amount of wax was made at that time.

Considerable has been said about these sun-strainers, but I have not learned of anybody who has made them a practical success here in the States, unless it is friend Poppleton, whose articles were given, with an illustration, on page 521, Sept., 1883. Wherever

the heat of the sun is sufficient, it will doubtless be not only a labor-saving institution, but it will give us a finer quality of both wax and honey than is usually obtained by means of fire heat or steam heat. The machine mentioned above seems very simple and easy to construct; and the idea of having it against the honey-house, so that the honey would run inside, is quite ingenious.

A LETTER FROM MRS. AXTELL.

SHE ASKS SOME QUESTIONS ABOUT THE WAY OUR BEES WERE PREPARED FOR WINTER.

DEAR FRIEND:—I should like to ask you a few questions about how you prepare your bees for winter, that they could come out a "booming" this spring. We have lost more than half of the 244 colonies we had last fall; now 42 marked good at Home Apiary, wintered in cellar, and 45 weak, many of which will have to be helped by brood or bees from the better colonies, or can not even save their queens at this late date.

At the Timber Apiary, only 8 good ones; about 30 that will barely save their queens. We find some dead every time we go through the hives; 38 left from the 125; we thought 119 would live, wintered in cellar. We knew they were in poor condition to winter last fall; but we were both of us in such poor health that we let them go.

I should like to ask how many combs per colony you leave in. Do you extract all the honey before feeding, and about how many pounds of sugar do you feed per hive? What month, and what time in the month do you feed for winter? Do you winter all out of doors? and do you sweep the snow away from the entrance? or if a hive seems clogged up, do you run a wire or stick in to clean out dead bees? Is it advisable to lean a board up in front of the hive, to keep the snow from covering the entrance, and let the snow alone? Would you shovel snow around the hives? How large an entrance do you leave open in winter? Do you extract the honey before feeding sugar syrup? What kind of a feeder do you use? Do you clip your queens' wings in the spring? We do not see that it hurts them any, and saves a good deal of trouble in getting them off the trees. Do you put an enameled cloth under your chaff cushions? If so, I should think it would not be porous enough to let the dampness pass off. Do you use the same oil cloth to put on top of the sections to keep the bees down? If so, is there not propolis enough on it to soil the sections? or do you clean the oil cloth, and how?

We had a circular sent us the other day by a company that makes oil-cloth ducking, etc., for sale. I wonder if you could not get it at reduced prices for bee-keepers to make covers to hives, as it would be so light, and not leak. Our hive-covers leak some, and we are thinking of getting the cloth and cover and paint.

Tell the girls that a part of the barrel of hats sent me were sent to the Indian Territory, and sold; the best were sold, and the money was used by that earnest missionary, S. R. Keams, to help build a church last year. This past year, more hats were sent him, and he is disposing of them to help build his third Indian church this coming season.

Of course, it is not all done by hat-work, but it helps, and those given away also help. One of his Sabbath-schools he said was nearly half built up by the children who had been induced to come by the present of a hat. The rest of the hats were sent to Talladega, Ala., for a freedmen's school.

If your girls see fit to send me another barrel of hats I will see that they are put to a similar use as the last. I always give the donors credit for things sent, and ask them to acknowledge them.

My health has been very poor this past winter; and I am now not able to sit up any; but hat-work is God-given work, for me to employ the hours spent on my bed to further his work, and to help fill my life with sunshine and happiness in that I can do something for his needy ones.

Roseville, Ill., Apr. 25, 1885. MRS. L. C. AXTELL.

My good friend Mrs. A., I am very sorry indeed that your health is so bad again; and yet it seems wonderful to think of your working, day after day, while you are not able to sit up. If I should ever be confined to my bed, I think that is just what I should want to do—work. If I am correct, almost if not quite every summer, when the bees begin to get out and store, you soon follow suit. Surely, Mrs. A., you are able to employ some careful person to put your bees in proper order, are you not? With the precarious state of your health, it seems to me your first duty is to have some one with you on whom you can depend. In my own case, I scarcely lifted a hand personally to fix our bees for winter, and a great part of the colonies I did not look at, but advised and directed all through. We left from five to eight combs in a hive, according to the strength of the colony. We did not do any extracting at all, and the amount of sugar fed was dependent on the size of the colony. We did not weigh at all, but just kept feeding until the combs were solid slabs of sealed stores. The bees were crowded into a pretty compact cluster in the center of the combs, usually having a little patch of brood there when the feeding was finished. Perhaps their stores averaged from 15 to 20 lbs. per colony. We commenced feeding in September, and were all through by the middle of October. We winter our bees all outdoors. We never meddle with snow around the entrances at all. Several times last winter our apiarist was a good deal worried about it. I told him I was sure that snow over the entrances never did any harm. The loose chaff over the frames, with only coarse burlap to keep it from rattling down among the bees, made it impossible that they should suffer from lack of ventilation, no matter what happened to the entrances.—We did not run any wire or stick in the entrances to clean out the dead bees. The entrances were left open full width, exactly as they were in the summer. With chaff hives we never put any thing in front of the entrances to keep away the snow, or keep the sun from shining on them. I would not shovel snow around the hives, because it would be likely to create disturbance with the bees. If the snow falls around the hives, even so as to cover them all up, well and good; but I do not believe shoveling can be done so as to avoid disturbance.—We did not extract any honey at all, before feeding; but the rea-

son why we did not was that, having so many colonies in one locality (400 to 500), our field is overstocked, and they consumed pretty much all they gathered — honey-dew with every thing else. Selling bees constantly by the pound, as we do, tends to work up almost all natural stores into brood, leaving the way open for sugar feeding.—We use principally the bread-pan feeder, figured on page 32 of our price list. To keep the bees from drowning, a piece of cheese-cloth is laid loosely over the top. We do not clip our queens' wings at all. You know we rarely have any swarming, because we keep selling our bees by the pound to such an extent that a hive seldom gets sufficiently populous.—We do not use an enamel cloth for wintering — only the sheet of coarse burlap mentioned before. After putting on this sheet of coarse burlap we put about a peck of loose chaff around the edges, making it impossible for the bees ever to push up, and so get around the ventilators in the cover.—We have not raised any section honey for some years, of any account. — We do not use any kind of oil cloth for hive-covers. Tin costs but little more, and we think it much the cheapest in the end.

I shall have to explain to our readers, that, some time ago, in response to a letter from Mrs. Axtell, we sent a barrel of ladies' hats, to be used in the mission work in the Indian Territory. These hats were old ones, such as can be found in almost anybody's garret. Mrs. A.'s explanation tells what became of them. Our factory hands will at once scrape up another barrelful or more; and if any of the bee-friends feel like assisting in the good work, Mrs. A. will give the required directions as to where they are to be sent.

O. M. BLANTON, AND THE PLACE WHERE HE LIVES.

A VIEW AMONG THE BEE-HIVES.

YOU remember friend Blanton, I suppose. He is the man who helped Bro. Jones play tricks on me when we were down in Cincinnati; said he would stop using tobacco; said he wanted a smoker, etc. Well, he got the smoker. By the way, I think he got several smokers. I should think he would need several, shouldn't you? Just look at his bee-hives. He is the man who has them stuck up on stilts, you know.

Dr. B. gave me the picture that I had the above engraving made from when we were in New Orleans. He had quite a lot of pictures, and I picked this out from among them. I asked him if it was because of high water that he stuck them up on stakes in that way, and he said no, it was only to have them handy. He is quite a big man, and I suppose it makes him red in the face to stoop over, so he has got all the bee-hives "histed up like." You notice he has lots of trees around too. Yes, and there is one stump. I do not like stumps; they bother our sulky plow. I guess, however, the doctor does not plow any around *that* stump. Sometimes his bees swarm and hang upon those trees. That is what he has that step-ladder for. Well, you see it takes an awful sight of legs to put legs on so many hives, and so he has two hives on one set of legs, in some places. I wish he would tell us if he likes them as well made that way. Come to think of it, I rather expected he would write a letter to go along with this picture; but may be he will send us one to be put in next time.

O. M. BLANTON'S APIARY, GREENVILLE, MISS.

APIS DORSATA ONCE MORE.

WILL THEY BEAR DOMESTICATION?

FRIEND ROOT:—*Apis dorsata*, after staying for twelve days with me, has absconded, and I hasten to give you the results of my first experiment with this bee.

1. Why did the bees abscond? On examination of the comb I found about half a pound of brood had been jammed into a fold of the comb made, when putting the comb into the basket for transportation from the hills. It was smelling very rank, and this of itself was enough to drive them off, doubtless.

2. I am not sure they had a queen. Before I got them into shape, about a quart of old bees swarmed up on a limb of a tall mango-tree, and after two days they left. At first the entrance to the hive was too small, and I think they could not readily find their comb, and so left. The queen might have been among them.

3. Perhaps this bee can not be made to stay in a hive at all, yet I am not at all satisfied that this is the case, and shall not be without much more experience.

We have gained some knowledge by this experiment. The young bees, when first hatched, are long and slender, very graceful in their shape and movements, of a soft dark yellow, approaching brown, which changes as they grow older. The abdomen grows fuller, and black bands appear, until the bee appears much darker, not only on the abdomen, but all over. The head, however, at first changes to jet black.

As there was a very little unsealed brood when I got them, and all hatched out in twelve days, I judge the time from egg to bee is about 21 days, as with common bees. I have a swarm of the *Apis florea* under observation (this is a unicomb bee also). I am struck with many things in common in the habits of these two kinds of bees, and have an idea that the study of the *Apis florea* will show us how to manage the *Apis dorsata*. But much observation is yet necessary. The comb of the *Apis dorsata* left with me measures about 2 ft. long by 1½ ft. deep. The honey-comb and brood-comb are quite distinct. The honey-comb is placed always *highest* up on the limb of the tree on which the nest is built, and is called by the natives the "honey-chattei." It does resemble a native chattei not a little in shape. From this, which is on the right in my comb, the brood-comb extends to the left, new comb being added along the whole edge, from the honey-comb around to the limb again. The honey-comb is 3 inches thick in its thickest part, but built in a cylindrical form. The natives say they have seen this honey-chattei 6 inches in diameter. The cells are 1½ inches deep, and less as the slope changes. There are three honey-cells to the inch. This comb is beautifully white. The walls of the cells are almost transparent. Honey is also deposited among the brood, but it seems to be of a different kind from that in the honey-chattei.

The brood-cells are from ½ to ⅝ inch deep. The number to the inch varies from 4 to 4½, or 23 cells to 5 inches. The brood-comb varies a little in thickness, and is about 1⅝ inches, and is a light brown in color. These bees on the comb form one of the most beautiful sights in nature I ever saw. During their stay they built comb and brought honey and water, but they did not at any time work as if they were happy. Just before leaving there was great running to and fro, and preening of wings and legs, preparatory to flight. Not more than half a dozen bees were left. I put one, just hatched out, on the alighting-board of an *A. Indica* swarm, and she immediately marched in like a queen, and the bees all made way for her. I suspect they got over their surprise and slew her, but I have not seen any results of such punishment. So much for experiment No. 1 with *Apis dorsata*.

P. S.—Wife says I've no eye for color; that, when first hatched, the *Apis dorsata* are light orange, which changes to darker orange, and then the black stripes appear. She says you don't know what a *chattei* is, and perhaps she is right. It is a cylindrical vessel shaped like a rather flat onion, only it is open on top, and the edge of the hole comes a little above the vessel, and then flares back somewhat. It is, in fact, a jar. This shape proves a very curious feature in the *A. dorsata* comb, and, when filled with pure white honey, is a sight worth seeing.

A. BUNKER.

Toungoo, Burmah, March 18, 1885.

Friend B., these are matters of great interest to us, and I would suggest that you get another swarm of *Apis dorsata* and experiment with them further. If you are out any in the way of funds in accomplishing this, let me know, and I will indemnify you. I do not quite make out how it is that a single comb built on a limb is in a cylindrical form. If I understand you, the comb of the *Apis dorsata* is not much different in dimension of cells from our own honey-combs. The large cells you describe, I should infer, are drone cells or what we sometimes call "store cells." And, by the way, does the *Apis dorsata* have drones similar to ours?

THOSE FIVE COMBS, ETC.

MORE ABOUT THE "NO-POLLEN" EXPERIMENT.

ON page 232 friend Root seems to desire further knowledge regarding the experiment I gave on page 231. I took away all the combs the colony had, and gave them five clean empty combs, which were very carefully examined, to see if they contained a single cell of pollen, not one of which was found. This was done about Sept. 15th to 20th. I now fed them 2½ lbs. of sugar syrup each night for ten nights in succession, making 25 lbs. fed. As the queen was not laying at the time the combs were taken away, I examined the colony after feeding five days, to see if any brood had been started, for I have never known a queen to start laying, in this locality, after she has once stopped, by feeding them for that purpose, as friend Root, Prof. Cook, and others, claim they do with them.

A careful examination at this time revealed only sugar syrup, for neither eggs nor pollen was found. I again examined them on the morning of the eleventh day from the time I commenced to feed, at which time I found no eggs nor pollen, although a space was left in their combs for a brood-nest, or, as I call it, a nest to winter in. Hence the insinuation of Prof. Cook, on page 238, that I guessed at the matter, is groundless. Again, I examined the colony about Oct. 25th, when tucking them up for winter, and found them clustered in and about their winter-nest, with no brood, nor any that look-

ed like young bees; and I firmly believe that there was not an egg laid by the queen, nor a bee-load of pollen gathered by those bees after I commenced to feed them. As far as the getting of meal is concerned, which Prof. Cook spoke of, by way of accounting for the absence of pollen husks in their excrement, I think that is far fetched; for I never saw bees take meal in the fall, and much less when no brood was being reared.

Well, where did the pollen come from which friend Cook found? We will let him answer. On March 10th he writes me, after he had received a piece of comb I sent him, taken from where the bees had died, which, the reader will bear in mind, was taken from near the top of the comb, and not from where the bees would have had their brood and pollen last fall, had they had such, "I find that the white substance" (I supposed this to be chyme) "at the bottom of the cells is the web or cocoon of once larval bees. To this I find pollen grains attached. I find a little pollen at the bottom of the cells, which, to the unaided eye, seem entirely empty; also some under the honey (syrup) on the side of the comb which you cut off. I find pollen, which the microscope reveals, in almost every cell." Hence it will be seen that these particles of pollen were scattered about the bottom of all these cells when the combs were given to the bees; for how else could it get under the syrup where Prof. Cook found it?

It will also be noticed that he did not find any pollen, except by the aid of the microscope; and when this was brought into requisition he finds a little in almost every cell, thus showing that bees use pollen in other ways than by the cellful, or half full, as we usually see it.

Why I have been thus particular in going into the minutia regarding this experiment, is because it has a direct bearing on the pollen theory, as it is applied to our wintering troubles. If I had only this one case, we might call it exceptional; but since this colony died I have lost three other colonies of diarrhœa (two in the cellar), which had only sugar syrup for stores, as far as the unaided eye could see.

I am asked, on page 232, "Did the bees have dysentery badly enough when they flew out so as to spot the snow?" Well, if they could have flown, the snow would have been spotted, I assure you, friend Root; for all of one end of the frames, and one side of the hive, was all smeared over with this excrement, which had all the appearance of being the same identically with that "which we are familiar with;" while the stench was as bad as any I ever smelled; and this was the same with the other three colonies. In fact, sugar syrup has shown no advantage over natural stores with me; and I see in GLEANINGS, and the other bee-papers, that others have had similar experience.

Now in closing I wish to ask: If bees do have the dysentery, and die with it, where no pollen can be detected by the unaided eye, in the combs that are placed in the hive for wintering, can the no-pollen theory be of any benefit to the average bee-keeper? Again, if we must wait till the first of November before feeding our bees, for fear that they will put pollen in our clean empty combs which we give them, as Prof. Cook thinks my bees did, can the no-pollen theory be made practical? Our best apiarists tell us that September is the month to prepare bees for winter, so that their stores may be sealed, and all is quiet early in the season. Once more: In the light of the above experiments, how are any, except thorough scientists, to know whereof they affirm regarding the "no pollen no brood" theory? and how does friend Root know but that his bees in his greenhouse and other experiments had many particles of pollen in their combs, but refused to rear brood from some other cause? Gentlemen, what do we *know* on these points, any way?

Borodino, N. Y., May, 1885. G. M. DOOLITTLE.

I think, friend D., we know something, even if we do not know it all, as yet. In regard to my experiments in the greenhouse, whether there was pollen remaining in the comb or not, I succeded in having the bees rear brood and stop rearing brood at pleasure by meal feeding, and by stopping the meal feeding. I did this during every month of that winter, until I was abundantly satisfied that there was at least a close connection between the pollen and brood. Whenever they exhausted their stores of meal, brood stopped, or very shortly after. By the way, friends, will it not be best to drop this pollen matter—at least for the present?

THE LATE DISASTERS OF WINTER A BENEFIT IN ONE WAY.

ALSO A WORD IN REGARD TO THE VETERANS WHO DO NOT WRITE ANY MORE.

I GATHER from correspondence through Central Iowa, that fully 80% of the bees that have been wintered outdoors are dead. I can see but one good result in it. Many of the bee-keepers have persisted in keeping the *blacks*, and it's generally that class (here) that left them out, unprotected, and are now wondering what's wrong. I think the Italians will have but little difficulty in taking the lead from this on.

What has become of Mrs. Axtell, that we hear no more of her? Probably (as she is an invalid) she has been in the furnace of affliction, and writing may be a burden. Her articles are always laden with good things. And then there is Hasty. Since his splendid translation of Virgil, has he put his candle under a bushel? And then the funny man who usually writes about Mr. Duster, "Under the Box-Elders;" has he gone to Congress?

HOW TO MAKE A CAVE.

Will not some of your correspondents tell us just how is the best way to arch over a cave with some good material that is cheap and will resist decay? Wintering bees in properly ventilated caves, in this latitude, is the coming way. D. E. BRUBAKER.

Maxwell, Ia., April 23, 1885.

Friend B., I believe it is a fact, that more black bees have died, and do die, than Italians; but I do not think the blacks any less hardy; in fact, I have sometimes thought that it was the other way. But the reason is, I think, the one you have suggested.—Mrs. Axtell answers for herself in this present number. As near as I can find out, friend Hasty goes by fits and starts somewhat, like many others who have much talent for serving the people. I have been expecting every little while that he would take a notion to write some more. The same with Mr. Duster, of the box-elders. May be he has lost his bees, and has got sour, but

we hope not.—Your cave business is just what I have been studying about; in fact, I do not know but I should have had a small Mammoth Cave down by the carp-pond before this time, if it were not for that difficulty you suggest—getting something to arch over, to hold up the dirt. I am afraid of boards, because they would rot or break, and may be some of the children would get buried up. I wonder if the stoneware men can't make us a great big horse-shoe tile, big enough so we could walk in and carry in bee-hives. We could extend it as we wanted more room, and it would last for ever.

WIDE, OR BROOD FRAMES, AND SEPARATORS.

FRIEND HEDDON'S EXPERIMENTS AND CONCLUSIONS IN REGARD TO THEM.

I HAVE been one of the pioneer opposers of wide frames and separators. At one time I thought of separators as many now think of ½-lb. sections; viz., that they cut the surplus departments up too small; but I have learned better, and I have for several years publicly said that separators are no hindrance to the amount of surplus we may receive, if other fixtures are properly arranged. Such practical honey-producers as Dr. C. C. Miller, and Oatman Bros., persuaded me to again give separators a thorough trial, and two years ago I did so by making 350 wide-frame supers (one story or tier of sections high), and used these side by side and over and under 300 of our cases, all worked on the tiering-up plan. I used separators of both wood and tin, about 1800 of wood and 300 of tin. My apprentices and neighbor Shirley assisted me in using and testing them. I have also used about 40 wide-frame supers two stories high. I have done my best to give these fixtures a comparative trial for the past two seasons, and I have used them in such quantities as to give us a physical as well as mental education regarding their merits. According to my present light I must render the following decisions:

1. My case is the best style of surplus receptacle I know of, *to use without separators*, and admits of no improvement by *me*.

2. I would rather abandon separators altogether, than use them in two-story supers.

3. I do not think there is any system of using separators, equal to the wide frame, *when used one story high*.

4. I would use no system of surplusage (either for comb or extracted honey) that did not give me the advantage of tiering up.

5. I prefer tin to wooden separators.

6. There are many advantages in the use of separators, and many in the non-use of them, and each person must be governed by his own special circumstances.

7. Their use or non-use need not affect the *quantity* of surplus secured.

I mean to continue the use of separators, and I am now perfecting a different style of super which I think will aid us greatly in their quick and easy manipulation, as well as their usefulness.

I can not see why my case is called "the Heddon, or Moore case." There is scarcely the least similarity between them. Bro. Moore's does not incase the sections. It is a rack to hold them in place only, if I understand the description correctly.

Dowagiac, Mich. JAS. HEDDON.

PERMANENT EMPLOYMENT.

Friend Tisdale tells us the Secret of it.

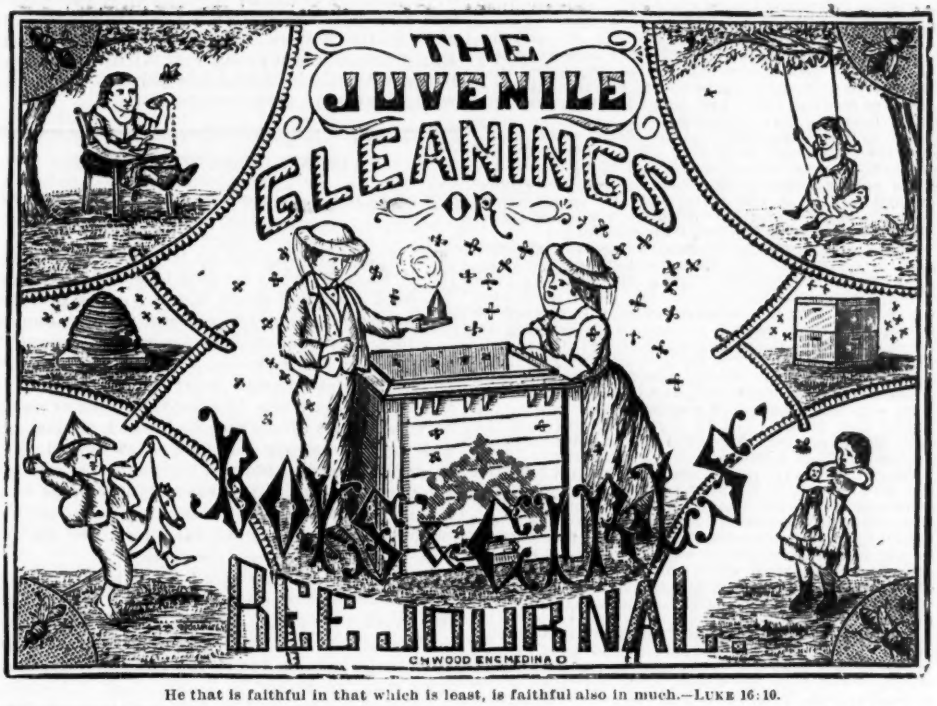
"WHOSO COMETH UNTO ME, I WILL IN NO WISE CAST OUT."

ON page 139 you gave most splendid advice to those out of employment. Now, friend Root, that was just my case two years ago. I was out of employment, used tobacco, etc. I tried to get work, but failed. I got discouraged; did not care what became of me; but I got to thinking over one of your sermons which I had seen in GLEANINGS. I got right down and prayed to God to help me, and he heard my prayers, and I have tried to keep his commandments ever since, but failed in some instances. Now, a good many men could not stay more than a short time with this man I work for. They said he was too hard a master, and they told *me* so; but I did stay with him. Perhaps it was because he was a Christian and they were not; and, what do you think? With so many out of employment, to-day there were five of the best farmers of Richfield came to me and wanted to hire me, and have their men sent adrift. No, I told them I was going to "stick to the old lady."

Now, young men, those of you out of employment, put your trust in the Lord Jesus Christ; keep his commands; go into the country; work for 30 cts. per day; be honest; build up a character; stick to good principles; do as your boss wants you to, if it is nothing more than to knock down a smoke-house and build it up as well as you know how; and whosoever does this will never want for work, and after a while get the best of wages. Do right, young man. May this be your motto, your shield, and your might, for the world ever honors true courage in man. Then never be afraid or ashamed to do right. A. H. TISDALE.

Richfield, Minn., Feb. 23, 1885.

Friend T., I think you have struck the true secret. The man who gets down on his knees, all alone by himself, and asks God to help him do right, will, if he is at all consistent, get up and go to work in a way that must win him plenty of friends anywhere. If he is working for Christ he is working for his fellow-men; and the Master has said, "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." If you are working for Christ you must be working for those around you; and this kind of service never fails to be appreciated, sooner or later. There are those who make a *profession*, who are out of employment, I know very well; but I have never yet failed of being able to find that there was trouble somewhere, when I got acquainted with such people. A man who insists on faithful, honest work, is often called by many a *hard* man, when he is simply a *just* man; but one who has the love of Christ in his heart should be able to get along pleasantly, even with a man who *is* a hard man. I have sometimes felt a good deal of pleasure in finding that I could, by an extra effort, get along pleasantly with those who have a reputation of being difficult and hard to please. And such little victories do one good; for if we get along easily with those who are difficult, we shall have no trouble with the rest of the world.



He that is faithful in that which is least, is faithful also in much.—LUKE 16:10.

MYSELF AND MY NEIGHBORS.

Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy strength, and with all thy mind; and thy neighbor as thyself.—LUKE 10:27.

AMONG the piles of things thrown on my table, from our heavy mails, there came yesterday a little pamphlet. I picked it up and absently turned to the first page. The words I read startled me. I put it in my pocket this morning, and at breakfast I read it aloud to our family circle. The words took hold of every heart, I believe, just as they took hold of me; and if I am not mistaken, the glances that were exchanged indicated that the words went home to other hearts than mine. Do you want to know what were those words that gave me a start—yes, that startle me now, and trouble me, because they remind me that I am a guilty sinner in God's sight? Well, here is the little sentence:

I had been thinking how strange a thing it was that I disliked so many people, and liked so few.

The next words were right in the same line, and they make me even now catch my breath, as it were, and call out from the bottom of my heart, "Lord, help!" Here is the next sentence:

Only to look at some persons seemed enough to put me out of humor, and make me feel like saying cross things.

And now I think I will give you the whole of the little pamphlet.

THE LANTERN PEOPLE.

I have been thinking how strange a thing it was that I disliked so many people and liked so few. Only to look at some persons seemed enough to put me out of humor and make me feel like saying cross things. But there were others (although not nearly so many of them) whom I loved to meet, and whom I could hardly be cross to if I tried. I had been thinking about this, when I fell asleep and had a dream.

I thought I was carried away to a strange country where it was always dark. No morning ever came there, the sun never shone, and there were no stars in the sky. Yet people were living there, and I could see them walking about. But they were very strange people, such as I had never seen before, nor heard of, nor even thought of. I called them the *Lantern People*, because they looked like great lanterns with lights inside of them that shone through. And they were of a very strange shape, for they had ever so many sides, and on every side was a picture. Some were pretty and some were ugly pictures. Every person I saw had both pretty and ugly sides.

Of course I was very much surprised, and stood looking a long while; for the people could not see me, though I could see them and was close to them. On some of their sides were pictures of snakes, wasps, and pigs; on other sides, of doves, lambs, flowers, and such beautiful things. And now I want to tell you a very curious thing about the way these people did when they met each other. I noticed when a man met another in the street, he would quickly turn around one of his sides, so that the man he met could see it and nothing else—that is, nothing but the picture that was on the side turned toward him.

While I stood watching I saw a man coming along, and he turned almost the whole way round, so as to bring the picture of a dog in front, where it could be most plainly seen. It was a bull-dog—one of the sort that shows its teeth, very ugly and savage-looking. I could not understand why he should take so much trouble to turn out that ugly picture (for he had prettier ones that I could see) until I saw another man coming toward him who turned out a picture uglier still. It was of a wolf.

As soon as they came close up to each other the pictures seemed to be alive. I was astonished to see their eyes move and their mouths open and

shut, seeming to snap at one another, and all I could hear were barkings and growlings until they had gone, the fierce beasts trying to bite each other as far as I could see them.

Next came a little girl. Happening to look behind her, she saw another little girl following her. At once she turned around one of her sides, that had the picture of a wasp on it; but the little girl who was coming after her turned the picture of a beautiful butterfly. As soon as they met, the wasp began to buzz and dart out its sharp sting, and I saw the butterfly fluttering and fluttering, till presently it was scared away, and the picture of a great spider came in its place. Then the spider seemed to dart at the wasp, and the wasp tried to sting the spider; and the little girls went off quarreling as fiercely as the two men had done.

Next I saw a young woman. She was prettier than any other of the Lantern People that I had seen. I saw her coming from a long way down the street, and she never turned her sides, no matter whom she met, but always kept one picture in front; and that was of a dove. It had a ring of black around its neck, and an olive-leaf in its beak. I thought to myself, "What a beautiful picture!" Just then another young woman came up and pushed rudely against her, and I saw this rude one turn out the picture of a snake. And the snake hissed and darted out its forked tongue, but the dove would not go. All it did was to coo softly and flutter its wings and hold out the olive-leaf.

When the snake found that it could not frighten the dove away, it began to creep off itself, as if ashamed; and what was my surprise to see presently another dove come in its place! And the doves began to coo to each other, and to look pleased and happy, and the two young women took hold of each other's hands; then they put their arms around one another's necks and kissed each other, and so walked happily away. And I awoke. This was the end of my dream.

My young friends, do you know what it means? It means that we may be gentle and kind to each other, or we may be cross and ill-natured, as we choose. The dogs, the wasps, and the snakes, mean ill-temper; the butterflies and the doves mean gentleness and kindness. When we do not like a person, we are very apt to turn toward him our ugly side; that is, the picture of the dog—or the snake, or the wasp. And if we do this, it is most likely he will turn his ugly side toward us. Then we quarrel and hate each other; and it is no wonder. How much better always to keep turned toward others the picture of the dove! Should we do this, it would be seldom indeed that the dove would not, sooner or later, be turned toward us.

Do you want to know who wrote it? I suppose it was our good friend Charles Foster, the author of the "Story of the Bible," and the little tract seems to be an advertisement of this book, which so many of you have read. Now then: Is it right that we should go through the world loving so few of our neighbors, and disliking so many? Jesus said, you know, "Love ye your enemies." Sometimes I think I do love even my enemies; that is, I think my greatest desire is to do them good, and that I rejoice at an opportunity of doing them a kindness; but, oh dear me! how quick I slip back and forget! Yes, I forget my Master and Savior who died for his enemies, because he loved them. Help me, O my Savior! Help me in this task that seems at times an almost hopeless one, of trying to turn nothing but a pleasant picture and pleasant exterior and a peaceful face to all my neighbors, no matter under what circumstances I find them or where they find me.

Even now as I breathe this prayer, light seems breaking over me. What a sad, sad world this would be, had the Savior never come to it! How many, many times, when troubles and trials come all around me, have I sought that refuge—"Come unto me, all ye that are weary and heavy laden." How much is this promise worth to us! Over and over again I think of it. All that the world can furnish, all that this vast universe can give in the way of happiness, sinks into insignificance when compared with that great boon, Christ's love and his help. "I am the way, the truth, and the life."

RAISING STRAWBERRIES.

MRS. MAHALA B. CHADDOCK TELLS US HER EXPERIENCE.

IT is real interesting to watch the Editor of GLEANINGS when he gets to doing any thing; he is so excited about it, and so sure that *that* is just *the thing*. I have been through one attack of the strawberry fever, and I know all about it. I had an idea once that a fortune could be made in strawberries. It is the easiest thing in the world to count up. If I sell $100 worth of strawberries from half an acre of ground, I could sell $200 worth from one acre; and on 80 acres I could raise $16,000 worth, and in a few years — a very few —I should be rich. Well, the very next year I did not sell $20.00 worth. It was a dry year, and the berries all dried up, and it ran on until we did two years with no berries for the table.

Last August, a year ago, I made up my mind to have some strawberries once more. I couldn't get any ground plowed, much less manured, subsoiled, underdrained, etc., but we had a patch of sweet corn that was to be fed to the cows, and Mr. Chaddock said I might set the plants there if I wanted to; but that as for him, he had no time to "bother" with strawberries. I engaged the plants in Vermont, five miles away, and was to go for them when the first rain fell. One night it rained all night, and the next day I went for them; but the man said it was too wet to go among the plants; that I must come again when it was not muddy. In a week I went again. This was on Saturday afternoon; and when we got home with the plants it was 6 o'clock. We must eat supper, milk the cows, and set out those 400 plants. Mr. Chaddock could not help any, because he was school director, and had to go to a meeting of the board that evening. We dug little holes with case-knives, poured half a pint of water in each hole, and set in the plants, putting them in a crooked row between the rows of corn. Jessie and Mamie Marshall (a visitor) gouged the holes; Harry carried the plants, and dropped one at each hole (sometimes two), and Minnie and I set them (Irving had to go after the cows and do the milking). Presently it grew dark, and the children grew tired and sleepy, and I sent them all to the house, and I took the lantern and finished setting the plants alone. I am a brave woman; I care nothing for robbers nor tramps: I can not imagine what the feeling is, that makes one afraid of the dark; but I was a sick woman; and when my back gave out I crawled on my hands and knees from one end of the row to the other, till the last plant was set; then I crawled to the house, and went to bed, and that night it rained, and every plant grew. Now, it seems to me that my way of setting strawberry-plants is a great deal more real than for Mr. Root to stand by a gardener and direct him to put one plant in each pot, and talk of the beauty of raising strawberries.

MAHALA B. CHADDOCK.

Vermont, Ill., April, 1885.

My friend, I know just exactly how you felt when you crawled on your hands and knees, and got the last of that big lot of plants set out, and whether the rest felt like helping any more or not. I think I know, too, how you felt when it rained and they all grew. Energy is a grand thing, especially just the kind of energy you speak of. But I think it is grander still when it is harnessed and made to work evenly, consistently, and methodically. Commence a whole year ahead, if necessary, in preparing your ground for strawberries. Underdrain it at one time, subsoil it and plow it as you know it ought to be at another time. Raise some plants yourself; and if you have them in pots, you won't need to mind very much whether it rains or not. We were setting plants out but yesterday, and the ground was so soft and nice that we did not have to gouge out holes with case-knives, and pour water into them. We stretched a stout cord the whole length of the field, clear from the carp-pond up almost to the house. Then we made the horse follow that cord, and plow and furrow in the soft dirt. The ground had been manured and harrowed and rolled and dragged, and worked up until it was so soft that almost any child might envy the job of moving the fine rich mold with his fingers. Mr. Weed says if you give him ground like that, and every thing fixed just right, he thinks he could set out 10,000 plants in a day. I know his back would ache almost as bad as yours, though, Mrs. C., by the time he had got half of the 10,000 planted; but I should feel a good deal more respect for the boy who got the backache that way (or girl either for that matter), than if they got the backache in a five-mile contest at the skating-rink.

A BEE-KEEPER IN TROUBLE.

ONE OF THE JUVENILES TELLS US ABOUT IT.

HERE is papa's report for last year. He says it will do to go in Blasted Hopes, if any will. Out of 80 stands of bees he never received one pound of honey, and to-day finds us with only 8 stands living. Bad luck seems to be his lot in every thing. He has not been out of the room for twelve days; he got his arm and hand caught in a belt in the elevator where he was at work, and tore it nearly all to pieces. It is his right arm, and he can't write to you. He says you will have to stop GLEANINGS, for he feels too poor to take it any longer. It frets him because he can't go to Sunday-school, but he still puts his trust in the Lord, and hopes for a better day to come. Please write to him. FRED PARSHALL.

Skidmore, Mo., April 20, 1885.

Why, Freddie, things do look dark at your house indeed, do they not? I am afraid your papa let his bees starve, did he not, or did they get aphis honey? I did not know there was much trouble in wintering so far south as you are. You say you did not get one pound of honey from 80 colonies. I believe that is one of the worst reports I ever knew. I should not have neglected to prepare them all for winter, though, even if I did not get a pound. Your locality has, in former years, given very good results, and it will yet—never fear. Go to work, Freddie, and make the most you possibly can of those eight remaining colonies. It will not be a very difficult matter to fill the 80 hives again, in your warm climate.—Now in regard to that accident. It is true, accidents of this nature will sometimes happen, but I am afraid your pa must have taken risks. We trust the damage will not be so bad after his arm is thoroughly healed up.—No, Freddie, we are not going to stop GLEANINGS. With your papa's permission we will keep it going right along, and may be some of the brethren may feel disposed to help you fill your 80 hives, in the way of donating a queen or two, when they can spare them. The brightest part of your little letter is the winding up, where you say your father is still going to put his trust in the Lord. Tell him to remember the words, "Whom he loveth he chasteneth." Now, when things get better, Freddie, please write us another letter, will you not? There is another pleasant thought, Freddie: Even if it should please God to permit your father to be kept away from Sunday-school, the school he was instrumental in starting will still go on, and will be a blessing, who knows how long?

ANOTHER LETTER FROM JAPAN.

HOW THE JAPANESE OBSERVE NEW YEAR.

MR. ROOT:—Please excuse me for not acknowledging the book you sent me, sooner. I was quite sick at the time it arrived, and was unwell for over a month. Then Christmas time drawing near, it made me very busy.

I should like to tell you about our Japanese Christmas service, but this year we postponed it till some time this month, and so it is impossible. The Japanese make a great ado about the new year, so I will tell you about that.

Every house is cleaned so as to look bright on New Year's day. They are decorated with a lobster, which signifies "many happy returns of the day till your body bends like a lobster" (I suppose you have noticed that boiled lobsters double up). On either side of the entrance is placed a pine-tree, and two or more pieces of bamboo. Sometimes the trees are joined by a rope, to which is fastened a number of pieces of paper, which are supposed to drive away evil spirits. The above festivities for the new year seem more like men's work, but you must not think the women are idle; they have to make their own and their families' clothing, for they must (?) all be new, since every Japanese wants to have *some* new article of clothing.

Just before the new year, all of the shops containing kites, toys, hair-pins, and battledores, are renewed, and they sell these very cheap then; but on New Year's day the prices rise enormously. Many of the cake-shops bake large round cakes made of "mochi," or mashed rice. They are set upon a little table in the houses during the festivities, after which they are thrown away. Many cook their meals for the first three days of January beforehand, so as to have a good rest at the beginning of the year.

If you would go out on New Year's day in Japan

you would find yourself in the midst of happy faces and bright dresses. You could not go far without seeing a group of young men and women playing battledoor and shuttlecock. They always have a box of Japanese black ink, with which they paint the faces of those that miss. You would also see young men, and even old men, flying kites beside the little boys. Every one is out in his good clothing. Flags and decorations are on every side. There are many happy faces, and the little babies beside the other children usually have a piece of candy or a toy in their hand.

I must not forget to mention the Japanese custom of making New-Year's calls. They try to visit all of their friends by the 3d of January; but if that is impossible, by the 7th. Japanese call it an almost unpardonable rudeness if all of their friends have not been to their house by the 7th.

Tokio, Japan, Jan. 2, 1885. ADA KRECKER.

HOW TO RAISE CRANBERRIES.

WRITTEN BY ONE OF OUR 15-YEAR-OLD JUVENILES.

UNCLE AMOS:—As you say you are going into the cranberry business, and want some advice how to prepare and set out a bed, I will tell you what I know about it, for my pa (L. C. Seaton) planted a bed in Minnesota, and I helped him, so I have some knowledge how it should be done.

The most important part is the selection of a site. A peat-bog, or a mucky slough, that is so situated that it can be drained or flooded at will, is a proper place.

Alluvial formation is the only one in which the cranberry can be successfully cultivated; but you want to avoid gravel, clay, and loam, as detrimental to its growth.

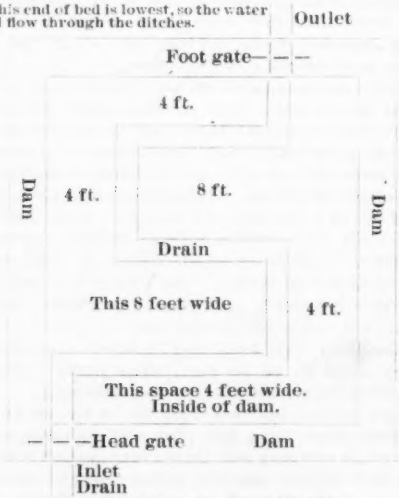


DIAGRAM OF CRANBERRY-BED.

This bed can be any size desired, but the drains in dry land must be only about 8 feet apart; but if the land is pretty damp they can be further apart, even 10 to 16 feet. It is best to fill in the inside of dam with sand; it will hold water better, also prevent weeds from growing on inside of dam.

If you have a peat-bog, you want to take a sharp spade or grub-hoe and cut off the bogs or uneven places, and make it just as level as a floor. If your bog has a sufficient depth of muck to support the vines, say 16 inches deep, then the pieces cut off to level down the bed can be placed around it to help form the dam (for you will need a dam 2 feet high all around your bed to hold the water to flood your vines during winter).

Now cut a ditch about 8 inches deep and 8 inches wide on the top, and 4 inches wide on the bottom, running zigzag the whole length of your bed, as shown in the diagram.

The object of this ditch is to drain and water your beds. If your beds are made in a springy place it will drain it; but if in a dry place you can water it through these ditches. By keeping the water constantly flowing through them at a depth of 3 inches it will soak through the beds and give your cranberries the proper amount of moisture.

Now, this bed wants to be covered 3 or 4 inches deep with pure clean sand, free from foul seed; this will keep down grass, weeds, etc., and is just what the cranberries require to give them a healthy growth. If you have no peat-bog, but a slough covered with water, then drain it, level off as before, cover with sand, and you will have an everlasting bed that will grow better the longer it stands. If you have neither requisite, then you must dig a trench 12 to 16 inches deep, the size you wish your bed, and fill with muck or peat, and cover with sand as before.

When one has plenty of water at hand, a pretty good cranberry bed can be made on a bed of clear sand, but the trench through the beds must be closer together, and water kept constantly running, and thoroughly flooded from one to two feet deep through winter.

If cranberry-vines are planted in too rich soil they will all grow to vines, and not bear well; hence the necessity of sanding and flooding. The Cape Cod is the best variety to plant for general use. The vines can be planted at any time during spring, when the beds are prepared, by cutting the vines into pieces about 4 inches long, and planting in the sand, leaving the ends sticking out an inch or so. The closer together they are planted, the sooner they will mat the ground, which they must do before they become good bearers.

Some have run their vines through a straw-cutter, and sowed them like oats, and dragged them in, and had good success with them; but in a small bed the best way is to take a garden-trowel or small hoe, and strike it into the ground at an angle of 45 degrees; lift the sand up, drop 2 or 3 vines in the hill, replace the sand, press down with the foot, and the work is done.

I have already written more than I intended, yet I have said nothing about the proper time for flooding and draining off water in spring, etc.

J. D. SEATON, age 15.

Ellensburg, Kittitas Co., Wash. Ter'y.

Many thanks, my young friend. Your account is given excellently; and even though we should not go into the business, it is worth something to know how such things are done. By the way, it seems to me that that system of irrigation would produce splendid results with many other kinds of vegetation. I should think that it would be quite troublesome having so many open ditches, especially if one were going to use a

horse in working in the ground. Why would not a good-sized tile answer the same purpose? Water flows on our low land through the tile almost all the time, more or less. Last fall I visited a celery farm where they put tile just the depth they wished the water to come, and it did the business beautifully. We shall be glad to know something more about the flooding, my young friend. And we should also like to know how your father made it pay. Is he raising cranberries yet?

Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from $1.00 to $1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: Sheer Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room. We have also Our Homes, Part I., and Our Homes, Part II. Besides the above books, you may have a photograph of our old house apiary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

WELL, my little friends, if you were to come to see me this beautiful May day, what do you think I would have to show you? I guess it would be the new poultry yard and house. I made the yard of two rolls of poultry-netting, and put the house in the middle. Then I had it separated so I could have Plymouth Rocks in one end and Light Brahmas in the other. The Light Brahmas I like the best, as they are so gentle, and nice looking too; and then they give us such beautiful big brown eggs every day. Huber and I gather the eggs; and when they are nice and clean we have a real good time admiring each one of the eggs. The Brahma rooster is almost as tall as Huber, and Huber can put his arm around the rooster's neck, without scaring him much either. A few days ago, when the men were at work on the house they let the two roosters get together, and, oh my! how they made the feathers fly, and blood too, some. I went and put my arms around the Brahma, and led him back home, and then I began talking to him about the folly of fighting when there was not any thing to fight about at all. What do you think he did? Why, he turned around and bristled up, and was going to fight me. I laughed so hard that it probably reminded him what he was about, and he went off looking kind o' sheepish. I think I shall have to put that little verse up somewhere along the division fence—that one that commences,—

"Let dogs delight to bark and bite."

You know the rest of it. I can not tell you to-day how the house is fixed, but may be I will have our engraver give you a picture of it. It has two porches—one on the east and one on the west side. The fowls spend most of their time in the porches.

FREDDIE'S 100 CHICKENS AND 60 EGGS A DAY, ETC.

Our bees wintered very well. We had 26 hives, and lost only one. In one hive the queen was not good, and we killed her. We are getting 60 eggs a day. We have 9 geese and 100 chickens.

FRED W. ISRAEL.

Damascus, Col. Co., O., May 4, 1885.

A LETTER FROM A MOTHERLESS LITTLE GIRL.

My mother died last October. I have one brother and one sister. Pa had 43 swarms of bees in the fall; 4 swarms died this winter. I have one swarm. When our bees get to robbing, pa exchanges hives and they go in their own. Pa sent to the U. S. Fish Commissioner for some German carp.

Constantine, Mich. EDNA RIFENBERGH, age 11.

A SWARM OF BOYS, ETC.

My papa keeps bees. He delights very much in them. We all like your A B C book and GLEANINGS. I like honey better than stings. I do not get about the bees much. Mamma needs me in the house most of the time. I have no sister, but five brothers, all younger than myself. Papa says if a man wants to be successful in bee-keeping he also needs a swarm of boys about him.

Davidsburg, Pa. CEVILLA K. EMIG, age 11.

A LETTER FROM A WEE SCOTCH LASSIE.

I am a wee Scotch lassie called Mina; went to school last harvest with sister Gina, and I am going often. Father is a great bee-keeper, and won the prize for the Highland essay. He takes his bees to the Lead Hills every year for heather honey. He is not well, and I help him all I can. When I was 3 I asked him if the wee bees had wee een to see in the dark—not the dark of the skep, but the dark when I am sleeping. A bee-freen calls me Wee Bee ever since; isn't that funny? It will be far to send me a book for this. WILLHEMINA SMITH THOMSON.

Auchinraith, Scotland.

ERNEST'S PAPA WITH HIS FOUR APIARIES.

My pa has four yards of bees; 52 colonies in one place, 40 in another, 30 in another, and 45 in another; they are in cellars, except 55, which are buried under the snow. It has been 48 degrees below zero here this winter, but the bees are doing well. Part of the bees, pa is working on shares. He has 100 sheep. It is fun to see the little lambs skip and play. Ma has 40 Plymouth Rocks that laid 248 eggs in the month of February. ERNEST A. GILL.

Viola, Wis., March 14, 1885.

Thank you, Ernest, for your report. We know your pa, and have known for some time that he was a big bee-keeper. Two hundred and forty-eight eggs in the month of February would be not quite nine eggs a day; but I should say that was tiptop for forty hens in February, away up in Wisconsin.

Grandpa had 53 swarms of bees in the fall, and now he has only 26. My papa is a Methodist preacher. MABEL POTTER, age 7.

Wonewoc, Wis., April 24, 1885.

FROM ONE OF OUR FLORIDA JUVENILES.

My papa has a few hives of bees. We have 19 little chickens. We have a dog and 8 pigs. They are growing fast. We have 9 pigs, with the old one. I have a cat. LETITIA LUTCH.

Hawks' Park, Fla., April 6, 1885.

CHARLEY'S REPORT.

Papa has had bad luck with his bees this winter, for it has been very cold here. We had a large snow here yesterday, but it is nearly all gone now. It was so cold that papa thinks that some of his bees are frozen to death. He has one hive that has lost its queen, and is nearly dead. If it dies, that will bring his number down to 69.

Windsor, N. C., March 23. CHAS. HARDEN.

SAVED 103 OUT OF 105.

We have had a bad winter. It was awful cold, but papa's bees wintered well; lost only two out of 105. The weather was warm last week; the bluebirds and robins were singing their merry songs, and the bees filled the air with their busy hum, which made us feel as if spring were here; but it has turned cold again. CHARLIE NEBEL, age 11.

High Hill, Mo., Mar. 9, 1885.

HOW ELMOR DEFENDED HIS SISTER.

We have one swarm of bees. One day my sister and myself were watching the bees work, when one stung my sister. She had never been stung before, and it made her jump. She started to run, and ran right toward me. I tried to get out of the way, but she kept coming to me. But I got away and she went into the house. ELMOR WILSON.

Allerton, Iowa, Mar. 6, 1885.

HONEY FROM THE PERSIMMON.

My papa has 9 hives of bees. Last year he got 250 lbs. of comb honey from six hives. The honey from the persimmon-blossom was the best of all. The bees make more honey from the persimmon than from any other source. The bees work on it from morning till night. We use the Langstroth hive with pound sections. I love to help take honey. I am not afraid of the bees.

LINDEN K. SHEPHERD, age 9.

Kent's Store, Fluvanna Co., Va., Feb. 26, 1885.

TWO QUEENS IN A HIVE.

We have six colonies. Mamma sold two for hives. I have two colonies of bees. One has got four queen-cells. I went to look at my other one, and a bee stung me just below my eye, and it hurt so badly that I could not see. I do not get stung often; but when they do sting me it hurts; you ought to have seen my face. Have you ever heard of two queens living together? We had such a case last fall. They kept building queen-cells, and we divided them twice, and after that we looked in and found a young queen, and we let her stay; and this spring, when we looked in, the old one was gone. LIZZIE WITTE.

McGregor, McLennan Co., Texas, Apr. 22, 1885.

Yes, Lizzie, it is quite common to find two queens in a hive, under the circumstances you mention—an old one and a young one, mother and daughter. The A B C book will tell you all about it.

ONE LEFT OUT OF THREE.

My papa has one stand of bees; he had three last fall, but two died. We have not had any honey from them yet. Papa never wears his veil when he is hunting for the queen; he is not afraid of them.

LENA W. BRIGGS, age 11.

Eddyville, Mass., Feb. 6, 1885.

A SHORT LETTER ABOUT MISTAKES.

It is a mistake to put off feeding until the nights become cold. Better be too early than too late. It is a mistake to use up all the pots, kettles, pans, spoons, stove-hooks, and other things upon which to play the dead-march, when a swarm has started on an excursion to the groves. B. B. GILLETT.

Allerton, Wayne Co., Ia., April 9, 1885.

FROM 4 TO 7, AND 500 LBS. OF HONEY.

My pa has 15 colonies of bees. He looked at them the other day, and found two of them dead. He had 7 swarms of bees from four colonies. We got 500 lbs. of box honey. We winter them on their summer stands. We pack them in chaff hives.

JOHNNY CARTRIGHT.

Weltonville, N. Y., April 12, 1885.

MARKING HIVES.

I am a little orphan-girl, and live with my married brother. We all love to read GLEANINGS, and work with the bees. You say in A B C, when the hives are close together there should be some mark on their homes so they would not get lost. To help the little bees, my brother has their hives all in a row, and nicely painted, one blue and the next one white, so on all through. I love their blue-eyed baby-boy. He calls his little wagon "hut O."

LILLIE CURRENS, age 12.

Goodland, Ind., March 12, 1885.

TAKING THE BEES OUT OF THE CELLAR.

It is pretty warm here to-day, but there is a lot of snow. We carried out 8 swarms; they had a good fly but it is rather cold yet. My pa was looking at a strong swarm, and he found a young Italian drone. Is it not early for them in this cold country? In looking over the bees in the clamp, pa found one dead with dysentery since my last; that leaves us 3 dead out of 30, up to date. There are small parts of the fall wheat bare, and it looks very well. When I received the big envelope to-day I opened it, expecting to get a price list; but, lo and behold! to my surprise I found the beautiful book, Pilgrim's Progress. I do not know how to express my thanks.

Shelburne, Can. CHARLES E. THOMPSON.

LITTLE ZOO'S LETTER.

I is rich now. Tozzer boy say, "How is oo rich?" I has the doodest light when the sun dets up, de puttiest dreen grass and fowers, and the dew-drops shine on 'em like the diamonds in your ma's rings; den after while the nice berries come on 'em; we tan eat 'em or dry 'em, tin have 'em on the table and in our pay-house. We fins dem up and down the nice roads along dem pretty fences and the banks of the creek, and blances; den the pretty birds sing for us while we gather them, and we gets dood tool-water to drink. When the pretty light goes out over the hills, the pretty stars peep out and shine right on me, an I spec my eyes shine right at 'em too. Tozzer boy says 'em aint mine, but ma says da is; that the dood man gims 'em to me, and all of us. So I feels rich with all these dood and pretty things, des waitin' for me to tall 'em mine. ZOO.

FROM A YOUNG BOATMAN.

My pa keeps bees. He had 50 stands in the fall; but the winter has been so cold that I do not know how many we have now. We did not get very much honey last fall. We take GLEANINGS. I learn a great deal by reading it. We live on the Desmoines River. My pa is ferryman. I am a little boy, but I can row a boat. Come over and I will give you a boat-ride. ELDIE WALKER.

Rousseau, Iowa, Feb. 7, 1885.

SUSIE'S LETTER.

Pa commenced with 16 stands of bees last spring, and increased to 60, and extracted 1400 lbs. of honey, and I turned the extractor. All of the bees died but 41 stands, and they came out all right this spring, and those that died had plenty of honey in the hives. I should like to know the cause of it. Last summer I had to let pa know when they swarmed. We hope to have a good honey crop this year. SUSIE GARRISON, age 11.

Whitehall, Ill., April 25, 1885.

THE FIRST SWARM OF BEES FOR 1885.

A swarm of bees alighted on a fence at one of our neighbor's, and they found them and put them in a hive that had comb and honey in it, and he says they are doing well. It was on the first day of April. They must have come from the woods. There was about a quart of them, and they had a queen. My papa has six swarms of bees in chaff hives; he lost none this winter; my grandpa lost a good many of his bees, and so have our neighbors.

Dayton, Ohio, April 15, 1885. VIOLA TURNER.

AN ORPHAN BOY'S LETTER.

I am a little boy of 13. I work in the field every day. We have a great many hives of bees, and get a great deal of honey. We sell it by the gallon. We eat a great deal of it on the table. It is very good in cold weather. I have a large truck wagon, and I work yearlings to it. I am an orphan boy, but I have a good guardian. I have been with him six years. I have a little single-barrel shot-gun. It throws shot 100 yards. I can kill a bird flying, or any way. T. S. TRAVILLIAN.

Caseyville, Miss., Apr. 8, 1885.

FIVE CENTS A SWARM.

My papa keeps bees. I watch them, and when I see them swarm I get 5 cts. One day last summer a swarm came out, and we just got them hived when a wind storm came up. It blew the hive over, and we lost a good many bees, and lost the queen. A neighbor was helping papa hive the bees, and the bees alighted all over him, and stung him so badly that he did not sleep any that night, and he said he would rather eat the honey than to hive the bees. I am a left-handed girl. ANNIE BENNETT.

Alexandria, Minn., March, 1885.

HOW MINNA LOST THE BEES BECAUSE SHE FORGOT AND LEFT THE COVER OF THE HIVE OFF.

I had a swarm of bees, and moved them 13 miles, and they did well for about a week. They commenced coming out, and I went out to look at them and left the top of the hive off, and next morning they were all dead. I was very sorry, for I loved to tend them. Grandma and myself went on shares, and she had 36 swarms and lost all but 4, and I lost mine too, but I am going to get me another one.

MINNA DICKENS, age 14.

Mossing Ford, Va., April 19, 1885.

ABOUT STRAWBERRIES.

I don't like honey, but I like strawberries. Papa has a nice bed of Parry, Sharpless, and Crescent Seedling strawberries. He thinks the best way to raise them is to set out a new bed every spring, and dig or plow up the old ones as soon as they are done bearing. HARRY I. DOW, age 6.

Corning, Steuben Co., N. Y.

THE DEAD QUEENS.

We have six hives of bees. One colony carried out a great many dead bees and three dead queens one day last month, and laid them on the alighting-board, and they have one live queen and a great many bees yet. Father picked up the dead queens and put them in a glass tumbler. He says the young queen stung her mother and sisters, and killed them. One other colony carried out their queens, and father bought a queen and gave them.

NONA JOHNSTON, age 8.

Brock, Neb., April 7, 1885.

HOW JOSEPH'S FATHER GOT A START IN BEE-KEEPING.

My father takes GLEANINGS, and thinks it is very interesting. He has 15 colonies of bees, but they did not make much honey last year. You can not guess how pa got some of his bees. He was out hunting two years ago last January, and he found them in the top of a big tree, hanging under a limb, and he shot them off with his rifle, and then piled up the comb and went home and got a bucket, and brought them home and put them in a hive.

JOSEPH H. THARP, age 10.

Harmony, Iredell Co., N. C., March, 1885.

ANOTHER LETTER FROM DAISY WHITE.

My pa keeps bees; he has 103 swarms at home, and 45 swarms away from home. It has been so cold for four weeks that pa doesn't know whether any swarms have died or not. We have got an acre of strawberries. I suppose we shall be very busy next summer, picking them. I have a baby-brother, and he can sing ever so many tunes. He is not two years old yet. He enjoys riding on the little sled as well as Huber. He likes to see us skate. I should like to go out to Medina again, I had such a nice time when I was there. I enjoy reading the letters in GLEANINGS.

New London, O. DAISY WHITE.

CHARLEY'S POETRY, ETC.

Bad luck with my bees this week. I had only two hives; one of them was in the woods. Father went to it yesterday, and the mice had killed the bees and eaten the honey, so that leaves me only one hive, but I hope they will swarm this spring.

THE BEES.

Up they are, bright and early,
For they love the sunshine dearly;
You see them flying all the day,
Hard at work and ne'er at play.

Often, after dark has come,
You see them flying for their home;
When at their hives they buzz their wings.
They never tire—poor little things!

But, oh the little things
In battle use their fearful stings;
But, hive them you certainly must,
Or not one of them can you trust.

But when the cold winter comes,
And shuts them in their homes,
By cold they'll all be slain,
If they come out too soon again.

CHARLES T. HARDEN, JR.

Windsor, N. C., April 6, 1885.

LETTER FROM A CALIFORNIA JUVENILE.

Our bees swarmed and alighted on the fancy woodwork of our cupola, or tower; my brother is

the bee-keeper, and he was not at home. My father and a gentlemen living with us got through a trap-door in the roof and hived them, and left them there until brother came home; then they brought them down. April 7, papa told us to come out to the corral before we had even had breakfast. We were very much pleased to see a nice little brown foal standing by our mare's side. Our papa lets her out on the grass every morning, and we go with him and run with our little foal, and we have much fun with her. LILLIAN T. HINDE, age 13.

Anaheim, Cal., Apr. 9, 1885.

ALTA'S LETTER JUST AS SHE WROTE IT.

DEAR MR ROOT. MY MA FOND A SWARM OF BEES ON AN OAK TREE. SHE PUT THEM IN THE SELLER. ITT THEY ALL DIED SHE WANTS TO GET SOME MORE. IF THIS IS WORTH A BOOK SEND THE JIANT KILLER. I AM 8 YEARS OLG.

Hatches Mills, Ind. ALTA M. COSTELLO.

WANTS A BOOK, EVEN IF SHE IS LITTLE.

If I am little and can't write, I want a book, so I get Jimmie to write for me. Jimmie goes to school all the time. I get awful lonesome.

BERTHA E. HOWE.

HOW JIMMIE'S FATHER FEEDS BEES.

As pa keeps bees and takes GLEANINGS, I thought I would write and tell you how he feeds his bees. He has a Simplicity feeder, which he sets on top or near the cluster; then with a box with a hole in the top he covers it up. The hole is covered with wire cloth; he places a tin tube through the chaff, so he can pour the syrup in the feeder. Pa got his first bees in the woods in a tree. That was in the spring of 1882; that summer he found another tree, but they had no queen, so he sent and got a queen of you, then bought one stand, so he had 3 stands to commence with in 1883. They increased to 15, and last summer they increased to 23; but pa doubled them up to 16, and now he has but seven stands left, as the chaff did not keep them from freezing. This is the first letter I ever wrote. I have one little blue-eyed sister, 4 years old. Her name is Bertha. JIMMIE R. HOWE, age 8.

Sulphur Hill, Ind., March 5, 1885.

ORANGE-BLOSSOMS FROM AWAY DOWN IN FLORIDA.

I received the book that you sent to me, and I like it very much indeed, especially the little book with little Bopeep in. We have a school now. I like the teacher very much indeed, and I like to go to school, and I hope that it will keep more than three months. Sometimes I whisper, and she keeps me in at recess; but I don't care for that, because I can have some fun. Every Friday we speak pieces. I like to speak. Tell me the name of your little girl. I have read some letters in GLEANINGS, and I found the name of Blue Eyes. I thought that I would send you some orange-blossoms. EVA GLAWSON.

New Smyrna, Fla., March 8, 1885.

Thank you, Eva, for the orange-blossoms. I am glad to know that you like to speak pieces at school. I am glad that your teacher is trying to have you stop whispering. Our little girl's name is Carrie, but we call her Caddie for short. She brings me some of her figure-work which she does at school, every few days; and, by the way, she is getting so she writes very well. I think we shall have to have one of her letters in GLEANINGS.

WHY KITTIE'S PAPA LOST NEARLY ONE-THIRD OF HIS BEES.

I got a pair of ear-rings for a present, and a nice chromo. Pa took his bees out two days ago. He lost nearly one-third. He set them in rows, packed with chaff. He was very busy last fall building a house and cistern, and neglected them. He made a brick filter in the cistern, something like that one in GLEANINGS. I should like to see little Huber. I wish you could see our blue-eyed baby. Her name is Pearle. KITTIE M. BARGAR.

Border Plains, Iowa, March 28, 1885.

JOHN'S REPORT.

From three colonies last spring we have taken 110 lbs. of extracted and 50 lbs. of comb honey, making in all 160 lbs., mostly from Spanish needle. Basswood yielded nothing, and white clover yielded only a small amount of honey. We increased them to 5. They are all in good condition. I packed 4 on their summer stands, and put one in the cellar. I carried it out of the cellar on the 5th ult., to give them a cleansing flight. As the bees are gathering pollen now, I think I have wintered well. Most of the farmers around here have lost a good many of their bees. The coldest weather here this winter was 26 degrees below zero. Pa is moving about 50 stands of his bees to a place called Bear Creek, five miles south of here. He has taken 30 down, and will take the rest in a week or two. JOHN V. NEBEL.

High Hill, Mo., April 1, 1885.

WHAT IS HONEY-DEW?

We received the hives all right, I am glad to say. I am a boy 14 years old, and live on a farm near Princeton. My papa keeps bees, but is traveling for the Trenton Iron Co. I put all of papa's hives together. We had 10 hives last fall, and have 8 out of 10 now. My mamma and I will have to take care of the bees this summer. Will you please tell me what honey-dew is? IRVING D. BANKS.

Princeton, N. J., April 20, 1885.

Friend Irving, it is a hard thing to answer; but I suppose the most of it is an exudation from certain insects that feed on the bark and foliage of different trees. At other times, the plants themselves seem to exude a sort of honey, or saccharine substance. For the last few days our bees have been very busy on the heads of lettuce in our cold frames. I suppose they find something that is sweet, of course, for they search every leaf carefully, and dive away down into the heads. They are on hand every morning, just as soon as the sun is up enough so they can fly.

MUSKRATS EATING THROUGH CARP-PONDS.

The animal that made the hole in your dam was probably a muskrat. They are sometimes very troublesome. My neighbor had a good dam spoiled, and all the water let out by them. He has rebuilt the dam, and stocked the pond with carp. He now keeps the rats away by watching for them, and shooting them whenever he sees any of their work. A good way is to trap them with a steel trap set under the water in their runs. J. H. TINKER.

Olathe, Kansas.

Yes, friend T., I know it was a muskrat, for one day when I was down by the creek I saw him walk along leisurely, sometimes under water and sometimes out. Once in a

while, when he found a water-plant to suit him he pulled it up and then sat down in the water to nibble it while he held the root in his paws. He looked as cute as could be, and I felt bad to mar his enjoyment. But I concluded it must be done, so I hunted up a nice smooth stone, and drew back, thinking I could pop him right square on the head, sure; but just then my foot hit a brush and made a noise. He stopped his lunch, looked at me just about a second rather curiously, and then went keeling head over heels down into the water, and finally crawled up under the turf right opposite the carp-pond. You see, he digs back in the bank there and comes out right inside of the pond, and away goes the water. He has not done it very lately, however, for we have pounded in so many tin scraps that he will spoil his teeth if he gets through again.

A PIECE ABOUT BEES — TAKEN FROM THE THIRD READER.

I will write you a piece about bees. I got it out of my Third Reader. When bees enter a new hive it is said that they divide themselves into four companies, one of which goes out to the fields in search of materials; another employs itself in laying the bottom and wall of the cells; a third in making the inside smooth from the corners, and the fourth in bringing food for the rest; but they are not always doing the same thing. They often exchange their tasks—those that have been in the fields coming in to work, and those that have been confined to the hive take their flight. They have a language, or signs, by which they understand each other. When one that is hungry meets a loaded bee, they stop, and the one that has honey bends down its trunk and lets the contents fall into the mouth of the other. Their diligence and labor are so great that in one day's time they are able to make cells in sufficient number to contain 3000 bees. Some of the bees are busy all the time in stopping the holes and openings, for it is necessary that they should be warm. Their cells they strengthen all round by bands or strings of wax, and when this is done they go over them all again with their teeth and pare away all that is unnecessary, and shape round the partitions, taking away all the chips or fragments of wax, and carrying them out of the hive. They are very neat, and keep their house perfectly clean. ANNIE LEUCK, age 13.

Campo Seco, Cal., March, 1885.

Friend Annie, your story is in the main pretty accurate, although I think it is a mistake about bees dividing themselves into four companies, although it is true that they apportion the work among them, some working at one thing and some at another; but they exchange places so much that it is pretty hard to lay down any rules in regard to their division of labor.

HOW HARRY GOT INTO TROUBLE.

Last summer I went out to the cornfield where my father was plowing, to tell him that the bees were swarming, and that I would plow till he hived them. I got myself into trouble, and had to plow all summer. HARRY NEFF.

Clive, Iowa, Feb. 8, 1885.

Now, Harry, I do not pity you a bit. For my part I can not think of any thing in this whole world that would be better fun than to plow. May be I would get tired of it, but you see it is doing something outdoors, right under God's blue sky, and then it is something useful too; and even though you do get very tired, how one does enjoy his dinner after such kind of work! and then that feeling of peace and happiness after you get through at night, and have your team all nicely cared for and put away! A boy who can do a good job of plowing need never be afraid of losing his situation; and if banks break, and money is hard to get, and all these other things happen, what does he care? I can very well remember when I used to hate plowing; but for all that, I can not understand now why I ever was so foolish.

ONLY 8 LOST OUT OF 147, AND THAT IN CANADA.

We have twins. We call them Wiman and May. They are four months old. Father had 147 colonies of bees; 8 of them died. They were out of doors. Those in the cellar are doing well. Father gave me 2 colonies. They are both alive. I do chores, and harness the horse for father. I had my leg broken when I was 6 years old, and have not been able to go to school much. SPENCER ORVIS, age 9.

Whitby, Ont., March 28, 1885.

Very good, Spencer. With 147 colonies of bees, 100 bushels of alsike clover, and twins four months old, it seems to me your father ought to be a happy man. See p. 280.

AND HERE IS A LETTER FROM 4½-YEAR-OLD BERTHA.

I am 4½ years old. I rock the babies for mother, and play with Lily. She learns not to tear books when she has them. Does Huber have books to play with? Lily tries to help me clear the table. Does Huber try to work any?

Whitby, Ont., Can. BERTHA ORVIS, *per mother*.

Thank you, Bertha. If you were at our house, you would think Huber did have books to play with. When I go home nights and get my *Ohio Farmer* he climbs up on my knee and begins, "Pic'er-book, pic'er-book, papa." And then when I ask him what "pic'er-book" he wants he will reply, "Want burny man;" and if I do not get it right off he will keep saying, "Burny man, papa, burny man." He means by this that he wants one of the old readers that has a picture in it of a man carrying a child out of a burning building. He can find the book anywhere in the secretary, just by seeing the back of it, when there are hundreds of other books almost like it. Yes, Huber tries to work. I do not know that he ever accomplishes very much, but I do know this: That every few minutes he makes a great *heap* of work, as they say down South. Well, Bertha, I think you do pretty well if you manage to rock both of those twin babies, and only 4½ years old.

COVERING BEES WITH HEMLOCK BOUGHS, ETC., FOR WINTER.

My papa keeps bees. Last year he had 4 swarms, spring count; they swarmed so we had 12 that year. In 1883 we got 179 lbs. of comb honey, and 90 lbs. of extracted. They all wintered but two. He wintered them out of doors, just as they stand in the summer. Our bees did not swarm at all last year, and we got only 100 lbs. of honey, and that was all clover, as basswood did not blossom. In the fall, papa

bought and took on shares 14 more, so he has got 26 stands now. He thinks a great deal of bees. In fact, we all do. Mamma sometimes hives them.

One of our neighbors has at two different times lost all of his bees by covering them with hemlock boughs. One year he lost 7, and another 20. The man who kept them thought that that did not have any thing to do with it, but my papa thought that was what killed them. What do you think?

BLANCH BULKLEY, age 13.

New Woodstock, N. Y., March 1, 1885.

I do not think the hemlock boughs did the bees any harm, friend Blanch, unless it was because they kept the sun from shining on the hives. Of course, it would keep off the wind some; but what we want to do is to keep away all the wind and at the same time let the hives have all the sunshine they can get.

ROY'S ENCOURAGING REPORT.

Pa began keeping bees when I was a year old. He and uncle Ned saw a swarm of bees flying over their heads in haying-time. They stopped them and put them in a hive. In a few days he bought three swarms in box hives for $21. That fall he bought 10 swarms in frame hives for $100. The next spring he bought a honey-extractor, uncapping-knife, and 10 lbs. of foundation of you. During the summer he made enough money from his bees to replace all the money he paid out for his bees, extractor, knife, foundation, lumber, etc., that he used. He has always made his own hives, crates, and sections; and for the last 7 years, foundation. He has never advertised, but he has lots of customers from far and near. He runs his machine with a horse power. He made a rigging to sandpaper sections, that cost 25 cents. It sandpapers them as they are sawed, and saws them ever so nice. Pa has taken your journal ever since he kept bees. He has always made bee-keeping pay. He had 75 swarms last spring; sold some in the fall, and had 99 left to winter. He got over 6000 lbs. of honey; sold 4113 lbs. comb honey to one firm in Charlotte.

Chester, Mich. ROY B. HUBBARD, age 10.

Well done, Roy; but it seems to me that machine that sandpapers the sections just as they come from the saw, and costs only 25 cents, needs a little more explanation. Can't you or your pa explain a little more, for the benefit of the brethren?

SEVEN-YEAR-OLD CHARLIE TELLS US HOW TO HARNESS THE HORSES WHEN THE BEES ARE CROSS.

My mamma has told me about you, and how kind you are to little boys. I should like to see the wheelbarrow full of books you have for little boys. My mamma works ever so busy amongst the bees, but they are eight miles from home, so we have to leave some one at home to take care of things when we work with the bees, for mamma says I must find the queens for her, as I have such sharp eyes.

I want to tell you how to harness horses when bees are cross. Get get the smoker ready, put the harness on the horses, and take them to the wagon. Let one go along with the smoker, and walk around the horses, puffing the smoker, and the bees will all fly away. That is the way we do, and it works first rate. I learn my lessons and recite to my mamma. I read the *Youth's Companion*, add, subtract, multiply, and divide, without a book, and I am learning the 16's in multiplication. I write, and study geography. I have done all this to-day, and helped irrigate, and the water drove a gopher out, and I killed it; and then Gipsy, my dog, ate it. We have a carp-pond, but they are all big, as the water is too cold for the spawn to hatch. CHARLIE WILSON, age 7.

San Bernardino, Cal., Apr. 2, 1885.

ESTHER'S STRAWBERRY LETTER.

My ma takes GLEANINGS, and we are pleased with it and the ever-welcome Home Papers. You wanted all that loved to cultivate or grow strawberries to inform you of their mode of cultivation and success. Here is our way: Set out in April or August; mulch in October so thick you can't see the ground by walking over them; this keeps them with green leaves all winter; the ground will not thaw out until it will stay so, and frost or light freezes do not reach them in the spring. Our patch of 12 by 16 feet did not do quite as well as some I saw in the newspaper, which gave from 80 to 120 quarts to the rod; but we got 32 quarts, besides some that were not measured. We took some to the festival, and sold them, three for a nickel. The largest one we measured was 7¼ inches in circumference; the most on one stem was 17 large berries.

ESTHER A. FREDLY, age 12.

Silver City, Iowa, April 20, 1885.

STRENGTHENING WEAK COLONIES BY THE PURCHASE OF BEES BY THE POUND.

My pa bought one stand of black bees, the summer before last. They have swarmed twice. The last swarm came out on the first day of July, and we were all away at a picnic. It was the eigth day after the first swarm. We expected it would come out, but we did not like to miss the picnic. But, however, when we came home, after looking around a while pa saw a ball of bees the size of a quart dipper. There was a heavy storm of rain that day, so they got under a board for shelter. About the last of August, pa was examining the first swarm, and he found that they had neither eggs nor brood, so we wanted to know from Mr. W., who was accustomed to bees, what was best to do. He advised us to get a few bees and a queen. Pa got 2½ lbs. of Italians and a queen. At night we smoked the black bees down, and then put the Italians in. But in the morning, when we went out, we saw all the black bees scattered about on the ground. Please let us know if it was right to put so many Italians with the blacks. Pa has no smoker; but when he examines the bees he blows some tobacco smoke into the hive. People say it injures the bees. CHAS. HAMILTON, age 12.

Apto, Ont., April 14, 1885.

Friend Charles, your father did all right, only that he did not watch the bees long enough to see that they united peaceably. He should have remained near the hive; and as soon as the first black bee came out stung, they should have had a good vigorous smoking. It is never safe to neglect this. You might have lost your 2½ lbs. of Italians. I am afraid now that they are queenless. I do not think that tobacco smoke injures the bees; but, Charley, I am quite sure that it does injure the man who blows it on the bees. Suppose you tell your pa that we will furnish him a bee-smoker if he will give up the use of tobacco, and give us the usual promise.

OUR HOMES.

Hast thou entered into the springs of the sea? or hast thou walked in the search of the depth.—JOB 38:16.

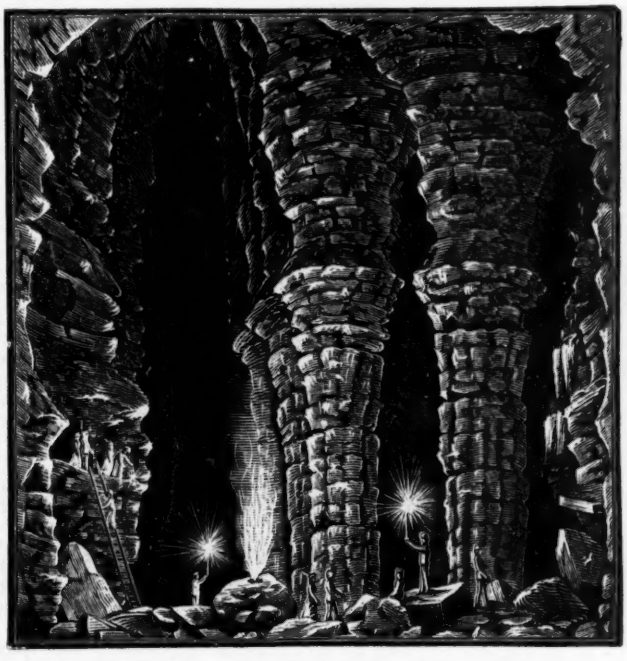
WHEN we had got into the cave perhaps a quarter of a mile, the guide pointed with his cane to the tracks of oxen, made by the saltpeter workers more than sixty years ago. I stooped down with my knife to cut one of the footprints, to see whether it had really turned to stone, as it looked to be. Our good friend Matt objected, however, remarking that, if every visitor were allowed to do that, the cave would soon be all whittled up. Pretty soon we had good evidence of the wisdom of his restrictions, for the ceiling to the cave, where it came down so as to be within reach overhead, was literally covered with names, dates, and inscriptions; in fact, it reminded one of a country schoolhouse with its carvings and markings. The guide remarked that this work was all done a great many years ago, and that for some time nothing of the kind has been allowed. I noticed one inscription something like this: "John Jones, 1815." It was made by holding a lamp so near the white ceiling as to blacken it with the smoke, and rude letters were made in this way. Think of smoking up these beautiful white ceilings, just to let people know that John Jones passed through here! I am glad this work has been stopped; and as I shut my knife, and put it back into my pocket, I concluded we must all live and learn. Further back in the newer explorations, the eye is not pained by such uncouth lettering.

Now we come to the stalactites. Some of them are old and hard, and look as though they had stood for centuries. Others are damp, and a drop of water hangs on the lower end, slowly evaporating, and adding to the length little by little, much in the way that an icicle increases in size and length as the water runs off from the roof from the melting snows on a wintry day. You can tell by the taste of this water as it trickles down, that it is charged with rocky matter in solution. Some of it tastes strongly of alum. When the water drops slowly on to the floor below, it evaporates by the currents of air through the cave, and thus piles up. By and by these stalagmites and stalactites meet and form great pillars, a view of which I give you in the cut above.

The trickling of the water has, during the ages, formed these immense supports, as they seem to be. This mammoth dome, which is the largest of all the domes yet discovered in the Mammoth Cave, is about 400 feet long, and 150 feet in length. The height varies from 80 to 250 feet. At the left of the picture we have a view of what looks like cliffs. Some of the visitors have climbed up part way of the cliff by means of a ladder. In one place these cliffs look so much like cliffs on the landscape that they have been named "Kentucky Cliffs."

A little further along we found a place where, back among the shelving in these cliffs, little partitions have been left so as to form veritable pigeon-holes, as if some giant had had them made to tuck away his papers. Some of the pigeon-holes, when reached by a ladder, would make a very commodious room for a moderate-sized family.

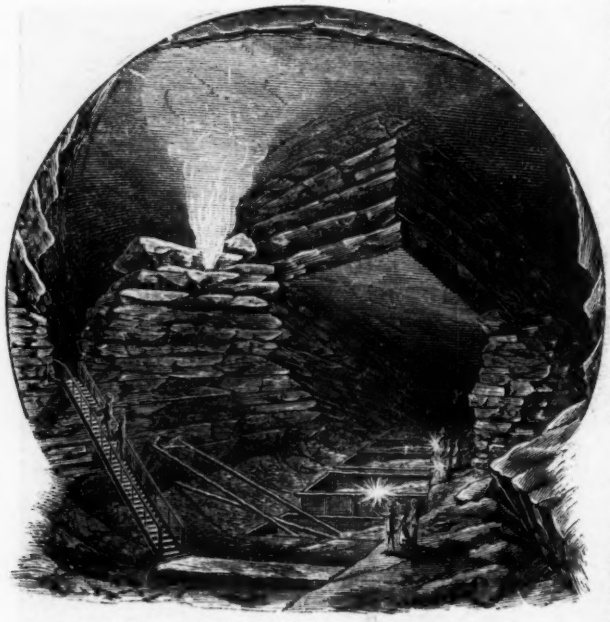
And now we come to the Methodist Church. I always liked churches (that is, of late years); and when our guide pointed to us the pulpit, and indicated that the logs placed conveniently around before it were the seats used by a band of worshipers fifty or sixty years ago it gave me a thrill of pleasure to think that our early fathers worshiped and reverenced the same God that we do now. Services have been at different times since held in this same old Methodist Church, as I have been told. The log seats are in a state of perfect preservation, and look now just as they did when first put there, only somewhat discolored by age. From the absence of schoolhouses and churches in the country around Mammoth Cave, I am afraid that the present age is hardly keeping up the devotional spirit of fifty years ago when they had meetings here regularly.



MAMMOTH DOME AND CORINTHIAN PILLARS.

About 150 yards beyond the Methodist Church, the guide pointed to us ruts cut in the soft mud made by the cart-wheels from the saltpeter works of 1812. This mud has now become a sort of hard stone, probably on account of the minerals held in solution by the water that helped to make the mud. And now we come to the eight huge vats where those old saltpeter works were managed, as I told you about last month. It has been suggested, that, if other sources failed, the Mammoth Cave would at any time furnish enough saltpeter to supply the world. Below we give a cut of these vats.

Before us are some huge rocks that at some time or other have fallen from the ceiling; in fact, when Matt burns one of the Bengal lights so as to light up the ceiling, you can see just where a great rock broke off. What is to hinder more of them from dropping off and burying up our little party?



GOTHIC GALLERIES AND OLD SALT-VATS.

Our guide tells us of a Scotchman who got so far, and, fearing that some rocks would tumble down, stopped and refused to go any further. Shall I tell you why there is no danger of their falling now, friends? It is because the rock is hard and firm, compared with what it was at the time these convulsions happened. The greater part of the Mammoth Cave is now dry and hard and firm.

By this time, one of our number whom Ernest informed me was a fellow-student in the college (but one with whom he was but little acquainted), uttered an oath. It fairly startled me. How could any one, in *such a place*, take the name of the great God in vain? A little further on, this same young man uttered an indecent remark. The eleven who composed our little band were men from different parts of the world, and from different avocations in life; but I was pleased to note that not one of them took any notice of his remark, even so much as to smile. Is it true, that blasphemy and impurity are always linked together?

Somebody sang out pretty soon, that he was thirsty. "All right," said the guide; "I was expecting somebody would be making that remark just about this time. We will go over to Wandering Willie's Spring, and get a drink."

Did I tell you that blind people are greatly pleased with Mammoth Cave? Singular, is it not? Well, Wandering Willie was a blind boy. He visited Mammoth Cave, and enjoyed himself hugely. Finally he was missing. After a little search they found him near a beautiful trickling spring. His sharp ear had caught the sound of dropping water, and the spring has been named after him. The water falls from the ceiling of a little cavern into a beautiful little round stone basin, and then trickles away through a little channel worn in the stone. A tin dipper hung from a nail in the ceiling; and while we stood around the spring, the guide passed the water, much as they used to do when we were children in the old schoolhouse, back among the woods. The water has a pleasant mineral taste to it. Here we are at the Giant's Coffin. We give a picture of it, but I do not think it is a very good one, on next page.

This coffin is 40 feet long, 20 feet wide, and 8 feet or more deep. Said I, after contemplating it a while, "Friend Matt, is there a little hole in the wall at the back side of that coffin?"

"Yes," said Matt, "there is."

"Well, that is the hole we want to crawl into."

But Matt replied that we could not crawl into that hole until he got ready, and we were going somewhere else first. The lady at the hotel had told us that we must be sure to ask to go back through that narrow passage; but as we had the promise of taking it in afterward, I was contented. A little further on we came to a ceiling almost as white and beautiful as a whitewashed wall; and, strange to tell, standing out in relief on this wall were strange figures of black oxide of manganese. The artist has attempted to show you one called the Ant-Eater. The Ant-Eater is, however, a great deal longer than is shown in the cut, and it needs a guide to explain what it is, or you might not understand it. A little further on you come to Barnum's Fat Girl, pictured on the ceiling by this same wonderful process from nature's laboratory. Still further, the Giant and Giantess. The giantess sits on the floor, looking up at her liege lord who stands over her, and for pastime they are tossing the baby back and forth.

The guide now announced that we would go back and take in that hole in the wall

behind the Giant's Coffin. Well, I tell you it is a hole. It is low and narrow. We had to almost get down and squeeze in; and if I were exploring it myself I should say, "Why, this surely can not be any thing; let us go back." Presently, however, when most of us began to get red in the face and feel cross, the ceiling began gradually to "let up" sowewhat. Finally, we drew a breath of relief when we could stand up and throw back our shoulders. Pretty soon we came to large rooms, until it was fully as large as the main Mammoth Cave. It seems funny that every little hole one sees, if he can manage to squeeze into should soon begin to open out and enlarge, and finally open up into large domes and caverns, and great beauties.

Here we come to a lot of monuments. They are made of loose stones put up pyramid fashion. Some of them were stuck full of cards and papers, and they bristle like feathers from a sitting hen when you want to count her eggs, for instance, to see if they are all there. We looked to the guide for an explanation. "Why, boys, you see the managers of the cave have shut down on people writing their names all over; but to satisfy the craving for leaving a record of your visit, they allow visitors to stick their cards in these monuments. There is a monument for each State, as you see. There is Ohio. You, my friend, are to pick up a stone and put it there, with the monument of your State; and you Pennsylvania man can put one there." We did as we were ordered, and the guide told us that these monuments were made by each visitor placing a stone; so you see I helped to build a monument to the memory of the State of Ohio.

Halloo! here is a village. Nine stone houses in regular order, built of hewn stone, and all perfect in every respect, except that they are roofless. We stop and look at the guide inquiringly; and while he tells us that a lot of poor consumptive brothers and sisters lived here five months in these stone houses, without once seeing the light of day, we stand around him with open mouths, in astonishment. They were wealthy people from Cincinnati; and, like consumptives when pretty near their last days, they were continually catching colds; and before they could recover from one they would catch another, and somebody suggested that, as the temperature here is even and regular, and as there are no drafts of cold air, they might possibly extend their period of life a little longer, even if recovery were impossible. The exhilarating air, too, that enabled us to walk so many miles without thinking of fatigue (see p. 284, April 15), it was thought, might be a benefit to these poor sufferers.

"Well, how did it turn out?" we asked.

"Well," said our guide, and we thought a little sadly, "they did not get any better, and the project of a sanitarium in Mammoth Cave was given up."

One of the poor sufferers died in the cave; and his friends thought he died sooner than he would have done had he been outdoors. They suffered for want of sunshine, just as one might have supposed they would, and just as the plants suffered in the little gardens adjoining these stone houses, where they tried to have a garden. If somebody could let the sunshine down through by means of some enormous sashes (like the crystal palace for instance), and then have the air of Mammoth Cave, with the other appurtenances, it seems to me the project might be a success after all. If it would not cure consumptives, may be it would help us to winter bees, and that is the point that is dear to our hearts, many of us, just now.

We now enter one of the most beautiful

THE GIANT'S COFFIN.

features of Mammoth Cave. It is what is called the Starry Chamber. The walls widen out and rise up in precipitous cliffs, so high that the ceiling is lost in darkness. A bench stands against one of these abrupt cliffs, and the guide remarks that perhaps we would like to sit down and take a little rest. Then he extends his hand for our lanterns, and we look at him a little curiously as we hand them over. Finally he has the whole eleven dangling in his two hands, and down he goes amid the loose rocks into a low remote corner of the cavern. Pretty soon he is lost to view, and all at once a sort of awe begins to steal over us as the dense darkness begins to penetrate our very bones. Dark? Why, it is literally the blackness of darkness. One begins to feel a little queer as time passes; and as Matt does not come back, some murmurs begin to arise. The friend before mentioned utters an oath; but it strikes me again, that, of all places in this world, this is the wrong

place to swear. Finally somebody utters an exclamation of surprise, and calls us to look up. Wonder of wonders! There are the stars twinkling down upon us from the vault overhead. Yes, and there is a comet, and anon some fleecy clouds appear, illumined by the rising sun. Oh yes! this is the Starry Chamber, and the light that looks so irresistibly like a gray tint of dawn is caused only by some Bengal lights the guide is burning. As we listen we can hear them hiss, and finally he comes dangling his lanterns, and laughing at the trick he has played upon us. The ceiling of this Starry Chamber is as black as black marble; and spotted all over its inky surface are little crystalline spots of crystallized gypsum; and as the light strikes them this makes the stars.

A little further, and a great log of wood sticks down from the ceiling. Who put it there? How did it get there in Mammoth Cave, any way? and who stuck it through that great rock? The water did it ages ago, without question, and surely there must have been communication with the upper world somewhere not very far off.

Pretty soon we have not only cliffs, but cliffs covered with drifted snow. Do you want to know what the drifted snow is? Why, it is epsom salts. Here we find footprints made by the barefooted boys. May be the footprints were made yesterday, but more likely one-fourth or one-half a century ago. No dust falls here, and every thing remains just where it was put, until some human agency dislodges it.

Wright's Rotunda now opens before us. It is 400 feet across in its shortest diameter. The ceiling is from 10 to 45 feet in height, and perfectly level, the difference in the height being produced entirely by the irregularity of the floor. The lamps fail to illumine these great chambers, and nothing but the Bengal lights can dispel the darkness.

Now we come to the Bride's Chamber. Once, a long time ago, a fair maiden wanted to get married. Her good mother objected, however, and finally exacted from her a promise that she would not marry any man on the face of the earth, without her mother's consent and approval. Then the two fond ones went down into Mammoth Cave and were married there, thus fulfilling the letter if not the spirit of her promise, that she would not be married to anybody on the *face* of the earth. Many couples have been married there since.

Here we are, at the Wooden-Bowl Room. Wooden bowls are all over the ceiling, turned upside down, only they are made of stone instead of wood. In fact, the whole room seems to be almost the shape of a great wooden bowl. It is also said, that years ago, a veritable wooden bowl was found here in this room. The peculiar formation of the rock, and the character of the water which flowed through it, I presume, had something to do with the formation of these queer-shaped cavities.

"Danger on the right!" signals Matt, and we crowd off against the left wall, peering anxiously into the thick darkness. Pretty soon Matt lights a roll of oiled paper and tumbles it overboard, and then we can see what the danger is. Down, down it goes, whirling spirally, lighting up the darkness for a distance of 65 feet. The chasm is about 25 feet across, and over it a dome 55 feet high. Now, then, the Labyrinth, a sort of rude stairway fashioned by nature, lets us go down hill at a pretty steep rate; then we go up hill, then we go down hill, and so we go twisting and turning, up and down, until we hardly know where we are or who we are. Finally a halt is called, and we are permitted to look through a window. Listen! Sure enough, that is water dripping; yes, and we begin to feel thirsty again as we hear the tinkle of a little waterfall. Down go the sheets of oiled paper again, blazing as they fall, and we look down 117 feet, then we look up 100 feet, and this is what is called Gorin's Dome. It used to be called 500 feet; but accurate measurements show it as above. We go back a piece, and then we come to the Bottomless Pit. A bridge goes across it, with an iron railing. The bridge looks as if many feet had trodden it. Before this bridge was built, visitors were obliged to stop here. This Bottomless Pit also extends upward as well as downward. Pensico Avenue is a mile long. By this time we had got so accustomed to wonderful things that I began to take things as a matter of course; and had Matt the guide gravely informed us that the next passage would take us right through the earth, and out into China, in about fifteen minutes, I do not know that we should have been very greatly surprised.

As we passed a great awkward-looking rock, something like one saucer lying inverted over another, Matt hit it with his cane, and said, "Sea-turtle." After he mentioned it, we agreed that it did look like a sea-turtle; but it was a whopper, I tell you. Scylla and Charybdis, two more great pits.

While I was gazing at the wonderful domes that we found above these deep pits, the thought struck me that possibly the sinkholes that I saw the water running into along the railroad track had some connection with these domes. I asked Matt about it, and he said he presumed it was the case. The water flows down in great quantities from the hills, or perhaps mountains, above. It runs into these valleys that I have told you about, sinks into the ground, and keeps on sinking and dissolving the formation until these deep wells or pits with their great domes above them are formed. At the foot of one of these great pits the floor widens out so as to cover about an acre in extent, and in one part of this great room is a body of water.

And now, friends, I have reached the close of my allotted space for this issue, and yet my story is not all told. A great truth impresses itself upon my mind as I go over these details. As we busy ourselves with our every-day cares about our separate little homes, how much do we realize of the magnitude and greatness of this vast universe about us? We know comparatively little of this earth on which we live; and even after we have sailed or traveled over its surface, there are regions beneath its surface, to be explored and to be studied, as I have been

telling you. If this whole earth, then, is but a grain of sand compared to other worlds, what are we, measured by the side of the great God who rules over all? and how little are we able to measure him in his infinite greatness!

Hast thou entered into the springs of the sea? or hast thou walked in the search of the depth?

FRIEND COOK TALKS TO US ABOUT POTATO CULTURE,

AND ABOUT FRIEND TERRY'S POTATO-BOOK.

DEAR MR. EDITOR:—I have read with exceeding interest the A B C of Potato Culture, by T. B. Terry. It is most refreshing to read a work so gushing full of real practical common sense, and from the pen of one who "has been right there" every time, and tells only what he knows, and that the product solely of earnest thought and study, mixed with hard sense. The fact that great gain comes only through great care and painstaking labor, is graphically enforced. Nothing given nothing gained, is God's law. He who reaps without sowing is a thief. Good potatoes, and bushels of them, come only from sweat of brawn or brain.

May I say, Mr. Editor, that every land-tiller could well afford to buy and read this book, even though he is never to raise a potato, as the truths are almost all so broad in their applications? How pertinent to all successful agriculture is the advice to pratice thorough tillage, as a fertilizer, a mulch and to irrigate! The talk of manures and their application is admirable. Though it is urged later to buy most products, it is well said that manures should be *made*, not *bought*.

The planting in drills is precisely what I do with corn, and largely for the same reasons. Then the Thomas Harrow for early weeding, and, I would add, stirring soil, and thus mulching and irrigating is just what I have proved one of the best things for early weeding of corn, until the plants are two or three inches high. His hints as to selection of seed may well be pondered and practiced by all growers of plants or animals.

The destruction of "Colorado beetles"—not "bugs"—is also well discussed. Certainly no one who can keep the beetles at bay, even at the same expense, should ever use Paris green; how much less, then, when it can be done at half the expense by hand-picking!

And, Mr. Editor, how good those words about hiring the children, and *paying them too!* I was not surprised that so able a potato-culturist should say that he did not know the cause of the scab. If it were from myriopods, as some assert, could so good an observer be ignorant of the fact?

It seems to me that the remarks about handling the crop—in fact, all the well-digested advice of this admirable brochure—would set any one to thinking, in a way to have rich fruit in any line of agriculture.

As I read about burying potatoes, I could not but think of my own words on "clamps" for our bees: "I much prefer the cellar where we can know how matters are progressing." As Mr. Terry says, the cellar storing is less laborious than the burying, which applies also to bees as well.

But, Mr. Editor, if we indorse all this work, we must say amen to the chapter on "Specialty" as well. And then won't brother Heddon claim us as his disciples? While it is best for a man to concentrate his efforts so that all work shall be done in the best way, it is also equally desirable to have a variety in just so far as it does not prevent this excellence of execution. We all know that a change in work means recreation. A. J. COOK.

Agricultural College, Mich., May 8, 1885.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: $1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, MAY 15, 1885.

Let nothing be done through strife or vainglory.—PHIL. 2: 3.

THE A B C of Potato Culture is meeting with a most gratifying sale. Price 35 cts.; by mail, 38 cts.

BEESWAX.

UNTIL further orders I will pay 25 cts. cash, or 2[illegible] cts. in trade. This is to take the place of the advertisement on the cover of the last number.

UNTESTED QUEENS.

THE demand has opened up beyond the supply, as is usual during this month. The way they are *now* coming in from the South, however, we shall soon be up with the orders.

THE BEE BUSINESS PROGRESSING IN ARKANSAS.

WE notice by one of the papers, that Mr. Anthony Opp, of Helena, has sold to Mr. Robert J. Adams, of Chicot Co., Ark., 200 colonies of bees. But a short time ago Mr. Opp made a shipment of 50 colonies to another customer in Chicot Co. The price paid for the 200 was $4.50 per colony.

THE WINTER IS PAST, AND THE SUMMER IS AT HAND.

A GREAT many reports in regard to winter losses are at hand; but the season has now come when we must turn our attention to something else than talking over our wintering troubles; therefore let us drop wintering for the present, and take up honey-getting.

IMPROVEMENT IN SIMPLICITY SMOKERS.

Friend J. A. Green, of Dayton, Ill., suggests that the Simplicity smoker is made much handier by having a stop for the door so it shuts down and strikes firm when the opening for putting in the fuel is closed. He makes them by chopping a nick in the circumference of the bottom of the fire-pot. We do it by putting in a tinned rivet, allowing it to project enough to stop the door.

ERRATA.

IN the advertisement of G. J. Flansburgh, in our issue of April 15, his initials were printed *E. J.* Please note.

On page 300 of our issue of May 1, 23d line of first column, we made Prof. Cook speak of beetles looking like little *bugs*. As a matter of course, he meant to compare the beetles with the *buds* that fall off.

On page 317, friend J. H. Brown says: "The mice destroyed the rest; all came out right." He meant to say, "The mice destroyed one; the rest came out all right." This, however, was the fault of the manuscript, and neither editor nor reader could make any thing else out of it. Please don't make a straight mark for *one*, friends.

THE A B C OF CARP CULTURE.

I HAVE often decided that I would never again advertise a book or any thing else until I had got it in my hands. Well, the above book was so near finished, months ago, that the greater part of the proof-sheets were in my hands. For some unknown reason it does not make its appearance. The A B C of Potato Culture is having a nice sale, for which we extend thanks.

TOBACCO.

AFTER the doctors decided that Gen. Grant could not get well, he just went and got well himself; or, at least, he is able to be around, as I suppose you all know. I presume you all know, too, that he has stopped using tobacco; and may it not be that the discontinuance of tobacco of itself has had something to do with his recovery? I have been wondering whether he ought not to have a smoker with the rest of the brethren; but then, I do not know whether he is a bee-keeper, and so I have not as yet decided to send him one.

PACKING PLANTS NICELY TO GO BY MAIL.

OUR thanks are due to C. Weckesser, of Marshallville, O., and A. T. Cook, of Clinton Hollow, N. Y., for sample plants. The first was three Miner's Prolific strawberry-plants, that opened up as fresh as they were when taken from their places in the garden; in fact, one could almost imagine that the dew yet lingered on their bright-green petals. Friend Cook sends us some splendid specimens of Houghton gooseberries and Golden-Cluster raspberry-plants. I should say, that both of the above-named friends understand their business of mailing plants, to a dot.

COMBS WHERE THE BEES HAVE DIED.

SOME of the veterans may get tired of hearing this old story over and over again; but there are others, a host of A B C scholars, who keep inquiring about it every spring, especially after such a mortality as has just come over our land. Your combs are just as good as they ever were, even if there are dead bees in the cells, and the combs have been neglected until they smell badly. Just put such combs, one at a time, in the center of a good strong colony, and the bees will fix it in a twinkling. Don't put too many in a weak colony, at one time, or the bees may get disgusted and swarm out. But a strong colony will take one or two at a time, and make them nice and sweet in four or five hours. It is a good plan to shake the dead bees out of the empty hives, so far as you can handily. Don't melt your combs up for wax, if they are good straight worker-combs. The honey that is contained in them will come in excellently for building up new colonies; and if you do not think it is wholesome for another winter, manage so as to have the stores consumed in rearing young bees.

OUR OWN APIARY.

At this date, May 6, the bees are getting loads of pollen and considerable honey from the soft-maples. We usually have fruit-trees in bloom by May 1, but this year they will be a week or ten days later. By the way, it seems to me due credit has never been given the maples, for the reason, probably, that we so seldom have our bees strong enough to do justice to them when they are in bloom, and many times they come in pretty nearly with fruit-bloom. Yesterday, while we were plowing down by the creek, with our new plow, "Solid Comfort," the bees were just roaring among the maple-trees. It seemed almost as if we were at work in an orchard in full bloom. When a thunder-cloud came up, the bees poured toward the apiary so as to make a good deal such a roar as in basswood time. I tell you, it is pleasant to have a hundred or two of *strong* colonies at a time when we used to have spring dwindling. Our bees have no disease of any kind, and we have not had a dwindle, unless it was a colony that got soaked by a cold rain when a cover of the hive blew off, and even that was carelessness.

May 14.—Here it is, and not a fruit-bloom yet to be seen; but the bees are just roaring on the hard-maples. Two hundred booming colonies get up quite a roar in the month of May, I assure you. The pounds of young bees that have to be shaken from their combs, however, to be put aboard of every train that leaves our depot, effectually extinguishes any thought of swarming. With the amount of business we are doing in bees by the pound, I fear our 200 colonies will not keep their strength very long; no, not even with another hundred purchased from neighbors Rice and Shook to back them up. We shall soon begin to have reinforcements of new swarms from the farmers round about, however, and we hope to keep up our reputation for prompt shipment.

BUCKWHEAT FOR SEED.

JUST about this time of year our troubles commence on orders for buckwheat. Do you want to know why on buckwheat more than other seeds? It is because it is quite bulky, and of but little value. We offer common buckwheat for seed now for $1.25 per bushel, or 35 cents per peck. Somebody away down in Texas orders half a bushel; it weighs 25 lbs., and is worth only about 65 cents. If we send it by mail, it would take over $3.00 worth of postage-stamps; if by express, the charges would be from $1.00 to $1.50; by freight, perhaps as much. The best way we could fix it, the charges would be a good deal more than a bushel is worth; and we have been obliged to make arrangements with all railroad and express companies, to pay all charges when our customers refuse to pay them, to prevent having them stopped on the way. Whatever is shipped with a card on, showing that it came from A. I. Root's establishment, we want every express company and railroad company in the world to understand that A. I. Root is good for the charges, even if the man to whom it is sent is not. Now, then, what are we going to do? It is quite customary to order seeds by express, after the ground is all ready; and *some men* always take whatever they order, no matter if the express charges are $2.00 on 50 cents' worth of seeds. But there are other men, generally those new to the business, or those who are not very well posted in regard to business rules, who will let a thing lie in the express office until it is sold for charges, whenever such charges are more than they expected. If the one who orders such bulky seeds that cost but little would just add, "I know the express charges will be heavy, but I am prepared to pay them," how pleasant it would make every thing! Do you not see the point, friends? We like to serve you; it is a pleasure to jump and run to execute your orders; but we hate to be burdened with heavy losses as the reward of our alacrity.

FOR SALE!

40 Colonies of ITALIAN and HYBRID BEES

IN CHAFF HIVES.

Price **$150.** cash for the lot, to be taken at the apiary.

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Write your name and address plainly on a postal, and get my prices before ordering your supplies.

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We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb fdn. for brood comb, cut to any size, for 45c per lb.: thin and bright yellow fdn., for sections, at 50c per lb. Extra thin Vandervort fdn., 10 to 12 sq. feet to the lb., for 55c per lb. We guarantee our fdn. to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. Send for prices for 25 lbs. or more.

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Made into Given foundation on shares or for cash, on favorable terms. Best machinery, experienced hands. Western bee-keepers, please take notice: save freight or delay, and secure an article as good as any for all purposes. **JOHN BIRD,**
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7-12db *Box 24. Quitman, Nodaway Co., Mo.*

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Send for my Illustrated Price List for 1885, Free.

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20 two-frame Nuclei with hybrid Queen				$3 00
30 three-frame "	"	"	"	4 00
50 two-frame "	"	dollar	"	3 50
10 two-frame "	"	tested	"	5 00

Dollar Queens from imported mothers, after June 1st, $1.00; tested Queens to breed from, $3.00. Will spare a few sittings of eggs from my yard of choice Langshans, Maj. Crode strains of Eng., $3.00 per 13 eggs; chick's in the fall, from $5.00 to 20.00 per pair; $10.00 to $30.00 per trio. Foundation, heavy, 45 cts. per lb.; 55 cts. per lb. light. Wax wanted. 10

J. J. HURLBERT, LYNDON, ILL.

STANLEY'S AUTOMATIC

HONEY-EXTRACTOR.

See advertisement in GLEANINGS for May 1st, page 326, or write, giving outside measure of frame, and stating from how many colonies you wish to extract, and get full particulars. Address 10d

G. W. STANLEY & BRO., WYOMING, N. Y.

GERMAN BROWN BEES,

75 cts. a pound; Queens to go with the same, 35 cts.; ½ pound, 50 cts. Will be ready to ship the 28th of May. Safe arrival guaranteed. Address

THOMAS GEDDE, LA SALLE, LA SALLE CO., ILL.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1½ cts. per sq. ft. is by selling the entire piece just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is first quality in every respect, and is just the thing for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.

Inches Wide.	No. of Rolls.	Number of Square Feet contained in each Roll Respectively.
8	4	3 rolls of 57, 60, s. f.
10	3	3 rolls of 75, 72, 70 s. f.
11	2	2 rolls, 80, 65 s. f.
12	3	3 rolls, 100 s. f. each.
16	2	2 rolls of 133 s. f. each, 1 of 73.
20	4	4 rolls of 166 s. f.
22	6	3 rolls of 181, 1 of 169, 1 189, 1 of 250 s. f.
24	18	9 rolls of 200, 1 of 180, 3 of 120, 3 of 100, 1 of 144 s. f.
26	74	24 rolls of 217, 15 of 216, 1 of 108, 4 of 106, 5 of 108, 1 of 195, 2 of 156, 2 of 215, 1 of 210 s. f.
28	68	32 rolls of 233, 5 of 234, 3 of 186, 1 of 230, 1 of 93, 1 of 93, 1 of 117 s. f.
30	25	4 rolls of 250, 1 each of 375 and 212 s. f.
32	10	3 rolls of 266, 1 of 133 s. f.
34	14	7 rolls of 281, 1 each of 240, 85, 255, 365, and 240 s. f.
36	12	5 rolls of 300, 1 of 540 s. f.
38	42	28 rolls of 316, 3 of 285, 2 of 317, 1 each of 110, 632, 158 and 215 s. f.
40	4	1 roll of 168 s. f.
42	3	1 roll of 105, 1 of 215 s. f.
44	2	1 roll of 366, 1 of 348 s. f.
46	1	1 roll of 152 s. f.
48	12	11 rolls of 400, 1 of 200 s. f.

A. I. ROOT, Medina, Ohio.

The North-Shade Apiary

Holds the field this spring. Our bees have wintered well **on fall honey and honey-dew** (bees are Italians). Full colonies in either the L. or the Gallup hives, for May delivery. Nuclei, Queens, and bees by the pound, for the season. *Price List Free.*

8-9tfd O. H. TOWNSEND, ALAMO, KAL. CO., MICH.

ITALIAN BEES!

10d **$5.00 TO $10.00 PER COLONY.**

BLOOD BROS., Quincy, Mass.

QUEENS! QUEENS!!

Untested Italian Queens, raised from pure mothers, $1.00. Tested, $1.75. I will guarantee satisfaction. Address **A. B. JOHNSON,**

10tfdb **Elizabethtown, Bladen Co., N. C.**

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfd

FOR SALE CHEAP. A SMALL **FRUIT-FARM,** CONTAINING 40 ACRES, near Birmingham, Ala. Good location for bees. For full particulars address **J. T. REED, Huffman, Jefferson Co., Alabama.** 9tfdb

VIBRATING TELEPHONE.

Patent Applied for.

Gives splendid satisfaction. No exorbitant rental fee to pay—sold outright and *guaranteed* to work nicely on lines within its compass (2 miles), or money refunded. **THE COST** for private lines **IS LESS** than **TWO MONTHS' RENTAL FEE** to the expensive **BELL TELEPHONES. THE VIBRATING TELEPHONE** is *the only* **PRACTICAL** *and* **RELIABLE** non-electric Telephone made, and warranted to give satisfaction, *or money refunded.* Agents can make immense profits erecting lines and get all the work they can do. Territory *given* Agents in which they are *protected* No previous experience required, as illustrated instructions show all about erecting lines. Where I have no agents, Telephones may be ordered direct for private use. Circulars and price list free. Mention this paper.

H. T. JOHNSON, 102 S Division St., Buffalo, N. Y. 6-17db

Contents of this Number.

A Good Man 386
Alfalfa 394
Attachment for Saw 390
Banana for Honey 378
Banner Apiary 371
Bees in Cuba 378
Bees on Fruit-Bloom, etc 387
Bees Working Down 394
Bees, Too Many 390
Bees, Chilled 375, 385
Bees, Thawing out 389
Bees, Fastening in Hives 390
Bee-Feeders 385
Bee-Keeping as a Business 388
Boardman's Letter 373
Bug, the Andrena 376
Burmah 388
California 372, 394
Carp-Ponds 387
Chaff, How Much? 384
Circulars Received 396
Comb-Frame Stand 391
Cotton, Mrs 387
Covers, Heddon 389
Cuba 381
Dorman's Report 386
Editorials 395
Eggs, Several in Cell 391
Feces, Dry 391
Fish, To Catch 391
Frame, The Jones 375
Frames, Five in Hive 377
Frames, Varying 394
Heads of Grain 384
Hibernation 375
Higgins on GLEANINGS 374
Hints to Bee-Keepers 393
Hives, Changing Place 387
Honey, Bleaching 388
Honey-Dew 378
Honey-Tanks 376
Honey-Boards, Slatted 391
Hyde on Wintering 389
Lived in Spite 291
Malloy's Lashing 381
Muth on The Depression 390
Names on Crates 371
Pennyroyal for Honey 379
Photograph of Bee-keepers 389
Pollen Theory 375
Potato Culture, XYZ 384
Potato-Book 380
Pyracantha 385
Queens, Condemning 386
Queens, Experience with 382
Raising Comb Honey 371
Reports Discouraging 383
Reports Encouraging 393
Saw, Home-Made 384
Shipping Bees 394
Simplicity Hive 389
Spaces, Adjusting 384
Swarming, To Prevent 384
Swarming-Boxes 379
Swarming-Time 383
Telephones 390
Things Lost at Postoffice 388
Tobacco, Selling 389
Trials of Beginner 385
Water-Proof, To make 374
Water for Shipment 287
Wintering 377, 380, 385

TRY THE BELLINZONA ITALIANS, and see for yourself that they are *THE BEST.* Warranted queens in May, $1.25; June, $1.10; July and after, $1.00; six for $5 00. Bees at reduced rates. Send for descriptive circular. Satisfaction guaranteed. CHAS. D. DUVALL,
9tfdb Spencerville, Mont. Co., Md.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfd

GERMAN BROWN BEES,

75 cts. a pound; Queens to go with the same, 35 cts.; ½ pound, 50 cts. Will be ready to ship the 28th of May. Safe arrival guaranteed. Address

THOMAS GEDYE, LA SALLE, LA SALLE CO., ILL.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April $1 25
Afterward 1 00

J. S. TADLOCK,
5tfdb LULING, CALDWELL CO., TEXAS.

MUTH'S HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1tfdb

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular. Untested queens, $11.00 per dozen. T. S. HALL,
7tfdb Kirby's Creek, Jackson Co., Ala.

ROOT'S CHAFF HIVES

Still lead, and we furnish them at

Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application.
5tfdb S. C. & J. P. WATTS, MURRAY, CLEARFIELD CO., PA.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or $2.00 per year.

$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or $2.00 per year.

Those whose names appear below agree to furnish Italian queens for $1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for $1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.
*H. H. Brown, Light Street, Columbia Co., Pa. 7tf
*Paul L. Viallon, Bayou Goula, La. 7tfd
*S. F. Newman, Norwalk, Huron Co., O. 7tfd
*Wm. Ballantine, Sago, Musk. Co., O. 7tfd
*D. G. Edmiston, Adrian, Len. Co., Mich. 9tfd
*S. G. Wood, Birmingham, Jeff. Co., Ala. 7tfd
*S. C. Perry, Portland, Ionia Co., Mich. 9tfd
Jas. O. Facey, Tavistock, Ont., Can. 7tfd
*H. J. Hancock, Siloam Springs, Benton Co., Ark. 9tfd
*E. T. Lewis, Toledo, Lucas Co., O. 3-1
*C. C. Vaughn, Columbia, Maury Co., Tenn. 9tfd
G. M. Doolittle, Borodino, Onondaga Co., N. Y. 3-13
D. A. McCord, Oxford, Butler Co., O. 5-15
S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-3
*E. Kretchmer, Coburg, Mont. Co., Iowa. 11tfd
*W. A. Compten, Lynnville, Giles Co., Tenn. 11tfd
*J. L. Hyde, Pomfret Landing, Wind. Co., Ct. 7tfd
D. McKenzie, Camp Parapet, Jeff. Parish, La. 7tfd
*J. J. Martin, N. Manchester, Wabash Co., Ind. 7-19
D. A. Pike, Smithsburg, Wash. Co., Md. 7-17
Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-19
Peter Brickey, Lawrenceburgh, Anderson Co., Ky. 11tfd
S. M. Darrah, Chenoa, McLean Co., Ill. 11-17
Ira D. Alderman, Taylor's Bridge, Samp. Co., N.C. 11-13tfd
J. W. Winder, Carrollton, New Orleans, La. 11tfd
J. W. Keeran, Bloomington, McLean Co., Ill. 11-21
*O. H. Townsend, Alamo, Kal. Co., Mich. 11tfd
*F. S. McClelland, New Brighton, Beav. Co., Pa. 11-13
*Elias Cole, Ashley, Delaware Co., O. 11-tfd
*Haines Bros., Moons, Fayette Co., O. 11-23

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.
P. L. Viallon, Bayou Goula, Iberville Par., La. 7tfd
C. W. Costellow, Waterboro, York Co., Me. 21-19
Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 9tfd
F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13
E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1
H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1
C. P. Bish, Petrolia, Butler Co., Pa. 3-13
Milo S. West, Box 202, Flint, Genesee Co., Mich. 3-13
E. Kretchmer, Coburg, Montgomery Co., Ia. 11tfd

Foundation-Mills Lower.

Until further notice, prices will be as follows: 4-inch mill, $10.00; 6-inch mill, $13.50; 10-in. mill, $20.00; 12-inch mill, $30.00; 14-inch mill, $40.00.

A. I. ROOT, Medina, O.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ad's intended for this department must not exceed 5 lines, and you must SAY you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To trade L. hives complete, for comb honey, sections full of fdn., or chaff hives, for bees or fdn. mill. 10d
JOHN C. STEWART, Hopkins, Nodaway Co., Mo.

WANTED.—From 300 to 500 lbs. extracted honey in exchange for Pure Italian Queens. Will allow 8 cents for white honey, and 6 cts. for clover and honey-dew mixed. Queens at $1.00 in June and July. Satisfaction guaranteed. L. L. TRIEM,
9 11d La Porte City, Black Hawk Co., Iowa.

WANTED.—To exchange Leconte pear-trees for dollar queens. Queens to be delivered at any time during the season, and trees will be delivered after the first killing frost. Leconte trees, 4 to 6 ft., 35c. per express; 1½ to 2½ ft., by mail, postpaid, 3 for $1.00. W. H. LAWS, Box 37, Fort Smith, Ark.

WANTED.—To exchange 25 Simplicity bee-hives, new and painted, for bees by the pound, ½ lb., or colony. H. KINGSBURY,
Lockport, Niagara Co., N. Y.

WANTED.—To exchange 2 knitting-machines (one Lamb, one Kimbell) bee-hives that have been used some; 50c and $1.00 apiece, F. O. B., for beeswax, or offers foundation, 44 to 50c per lb., for cash or wax; wax worked on press on shares or for cash. A. J. NORRIS,
11-12d Cedar Falls, Black Hawk Co., Iowa.

WANTED.—To exchange hives made up or in the flat, for bees, queens, and new honey. Send for price list free. J. R. LINDLEY,
Georgetown, Ver. Co., Ill.

WANTED.—To exchange one second-hand 50-inch painted bicycle for four colonies of bees. Italians preferred. Send for particulars.
C. L. HILL, Dennison, Tus. Co., Ohio.

WANTED.—To exchange for bees by the pound or otherwise, 50 lbs. nice comb foundation, L. size, at 40 cts. per lb.; also 100 Simplicity hives and frames, some of them used a very little, and some still in the flat. All at low rates. Speak promptly.
D. G. EDMISTON, Adrian, Lenawee Co., Mich.

HILL-SIDE APIARY.

QUEENS, & BEES BY THE POUND,

NUCLEUS, OR FULL COLONIES.

Send for circular to

W. B. COGGESHALL, Supt.,

11d HILL-SIDE APIARY, SUMMIT, UNION CO., NEW JERSEY.

THE IDEAL VEIL.

Glass front; light, durable, convenient, practicable. Other veils endanger your sight. Will please you, or refund money. Is this fair enough? Only 65 c., postpaid. Address

KANAWHA-VALLEY APIARY.

11d *JNO. C. CAPEHART, St. Albans, W. Va.*

TESTED QUEENS, $2.00. Untested, $1.00. 4-frame nuclei, $3.50 and $4.50. Mississippi wax-extractor, $3.00. OSCAR F. BLEDSOE, Grenada, Miss. 3tfd

JOS. GIBBS,
Breeder and Dealer in
FERRETS, GUINEA PIGS, AND RABBITS.

Rabbits, $1.00 per pair. Guinea Pigs, $1.50 per pair. Send two one-cent stamps for circular. Name this paper. 11 *Norwalk, Ohio.*

HELP FOR THE SUFFERERS.

The following friends have agreed to furnish bees and queens at low prices, for the benefit of the friends who have lost badly during the past severe winter. In consideration of this, they are allowed to give the following notices once free of charge. As will be noticed, the prices are more or less lower than our regular advertised rates.

After June 1, I will sell a few 2-frame nuclei with tested queen at $4.00, Simplicity frames, wired and built on fdn. with brood, bees, and honey for the trip. Shipped in light boxes.
CHALON FOWLS, Oberlin, Ohio.

I will supply those who have lost their bees, with a few hybrid queens at 50c each; queen with ½ lb. bees, at $1.00; bees by the pound at $1.00. *Safe arrival guaranteed.*
WM. H. CATHER, Ashville, St. Clair Co., Ala.

If any of the friends who have lost bees the past winter, and wish to try again will write me, I will quote them prices which can not fail to be satisfactory. I have a few colonies with queens from Heddon stock, and three or four hybrid colonies; also pure Italians, about 15 in all, to spare. First come first served.
R. J. FOX, Natick, Middlesex Co., Mass.

During the months of June and July I will sell 2-frame nuclei of Italian and hybrid bees, with untested Italian queen, one frame to contain brood, at $2.25. Italian bees by the pound, $1.00. Satisfaction guaranteed.
MRS. A. F. PROPER, Portland, Jay Co., Ind.

After June 1, eight colonies Italian bees, with untested queen, from imported mother, $5.00 each. Bees, $1.25 per pound. Untested queens from imported mother, $1.00 each. After Aug. 1, 80c. Safe arrival guaranteed. J. W. CRENSHAW,
Versailles, Woodford Co., Ky.

I will sell 25 strong colonies of hybrid bees, with laying queens in 10-frame Root's Simplicity hives, at $5.00. M. LAFOREST,
Thibodaux, Lafourche Parish, La.

I have three colonies of 8 frames each for $4.00 each; they are hybrids, or dark Italians. The reason I have them for sale is, they are not in Simplicity frames, so I shall dispose of them at the above prices. Price cash, one or all, to suit customer; no contagious disease in the State that I know of. Send money by money order to Arcadia, Crawford Co. S. C. FREDERICK, Coal Vale, Craw. Co., Kan.

I will sell, during the month of May and June, bees by the pound, at $1.00. Two L. frame nuclei and queen, $2.00. I guarantee safe arrival.
W. R. WHITMAN, Nashville, Davidson Co., Tenn.

I will sell, and deliver at Otsego express office, 50 colonies of bees, mostly Italians, queens reared from pure mothers, 9 straight worker combs (Adair frame) in hives, for $7.50. Q. frame nucleus in L. or Adair frame, with bees and brood and untested queens, in July. The above queens are reared from imported mother, Root's importation, in light box, for $3.00. I will do by you as I would wish to be done by. CALVIN LOVETT,
Otsego, Allegan Co., Mich.

WE WILL SEND,

June 10th to July 15th, untested queens for 90 cts; after, to Sept. 1, 80 cents. Tested queens, $1.50; choice, $2.00. Bees, 1 lb., untested queen, $1.80 now. Postal notes (no stamps) on New Iberia, La.

SAFE ARRIVAL GUARANTEED.

J. W. K. SHAW & CO.,

LOREAUVILLE, Iberia Par., La.

BEES & QUEENS At greatly reduced prices. After June 15 I will sell 2-frame nuclei, with 2 lbs. of bees in each, no queen, for $2.25 each. Tested queens, $1.50 each; warranted queens, $1.00 each; untested queens, 75 cts. each, either Syrian or Italian. J. B. GOOD, SPARTA, TENN.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretchmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky., King, Aspinwall & Co., 16 Thomas St., New York City, C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan., and numerous other dealers.

Write for *samples free*, and price list of supplies, accompanied with **150 Complimentary** and *unsolicited testimonials*, from as many bee-keepers, in 1883. *We guarantee every inch of our foundation equal to sample in every respect.*

CHAS. DADANT & SON,
3btfd **Hamilton, Hancock Co., Illinois.**

DIXON & DILLON,

Parrish, Franklin Co., Illinois,

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure **ITALIAN BEES and QUEENS.** No other bees kept in our yards. For further information, send for price list. 6-13db

I HAVE THEM. Pure Italian Queens, raised from the choicest stock, ready to mail now. Untested queens, $1.00. Tested queens, 2.00. Send me your order, and send for my circular of queens and bees. J. P. CONNELL.
9-20db Hillsboro, Hill Co., Texas.

I WILL SELL

Chaff hives all complete, with lower frames, for $2.50; in flat, $1.50; 2-story Simplicity, complete, $1.25; in flat, 90c.

Comb Foundation, made from pure refined wax, 45c per lb. for heavy; 55 for light. Other supplies. Send for price list. A. F. STAUFFER,
7-12db Sterling, Whiteside Co., Ill.

ALBINO and ITALIAN QUEENS NOW READY.

Tested queens of either race, before July 15	$2 00
After July 15	1 50
Untested queens before July 1	1 25
After July 1	1 00

Satisfaction guaranteed. For price of full colonies, send for circular to **J. F. HIXON,**
11-12d **Lock 53, Wash. Co., Md.**

FOR SALE — In fine condition and good locations, half interest in one or two apiaries of 100 colonies or more each, separately or together. A good opening in a fine bee-country for a first-class man. Good reason for selling. Cheap for cash, or part credit. **BENJ. F. AVERILL,**
11-12d **Riverton, Bolivar Co., Miss.**

Sections, One-Piece, $4.50 per M.

Samples and price list free.

11d **S. Y. ORR, Morning Sun, Iowa.**

ITALIAN QUEENS AND BEES FOR SALE.

Untested, $1.00 each; tested, $2.00 each. For full colonies, and bees by pound, or 2 and 3 frame nuclei, write for prices. JOHN NEBEL & SON,
11-12d High Hill, Montgomery Co., Mo.

EASTERN QUEENS.

Importing large quantities, we are enabled to quote:

	Spring.	Fall.
Syrian Queens	$9 00	$7 00
Palestine "	8 00	6 00
Italian "	4 00	3 00

All guaranteed pure, and reared in native lands, safely delivered by mail. Registered, draft, P. O.

THOS. EDEY & SON,
Steam Joinery Works, St. Neots, England.
10-11 tfd

ITALIAN QUEENS,

$1.00; $10.00 per dozen; tested, $2.00. Safe arrival guaranteed. Circular free.

J. M. KILLOUGH & CO.,
10tfdb. **San Marcos, Hays Co., Tex.**

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,
9 20db **Box 172. Fresno City, Cal.**

BINGHAM SMOKERS AND KNIVES.

BY MAIL, POSTPAID.

Doctor smoker (wide shield)....3½ inch	$2 00
Conqueror smoker (wide shield) 3 "	1 75
Large smoker (wide shield)....2½ "	1 50
Extra smoker (wide shield)....2 "	1 25
Plain smoker....2 "	1 00
Little Wonder smoker....1¾ "	65
Bingham & Hetherington Honey-Knife, 2-inch	1 15

To sell again, app'y for dozen or half-dozen rates. Address

BINGHAM & HETHERINGTON, ABRONIA, MICH.
10tfdb

Warranted Italian Queens,

bred with care, from finest imported stock, only $1.00. Address for price list.
9 S. F. REED, No. Dorchester, N. H.

THE CANADIAN BEE JOURNAL.

WEEKLY, $1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. A few full colonies of choice Italians, in Heddon hives, for sale at $8.00 per colony. Untested Italian queens $1.00 each. Tested queens, reared last year in the home apiary, $2.00 each. Beeswax wanted. Make money orders payable at Flint. 9tfdb

FOR SALE. — 500 wired combs, 17⅝x9⅛, new, straight, and perfect, at 15 cts. each.
11 R. HYDE, Alderly, Dodge Co., Wis.

CALL IN TIME

For colonies of pure Italian bees, with home-bred queen, each, $7.00; 3, $6.00; 5 to 10, $5.50; 15, $5.00. Foundation for sale. Beeswax wanted. For particulars, call. E. S. Hildemann, Ashippun, Dodge Co., Wis.
10-11d

Imported TUNISIAN Queens.
10-11d **FRANK BENTON,** MUNICH, GERMANY.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey.*—At present, sales of comb honey are very slow; and owing to the lateness of the season we do not anticipate any change in prices until the new crop commences to arrive. We quote at present prices as follows:

Fancy white clover,	1-lb.	sections,	per lb.	14@15c
Fair to good "	"	"	"	12@13c
Fancy "	2-lb.	"	"	13@14c
Fair to good "	"	"	"	11@12c
Fancy buckwheat,	1-lb.	"	"	9@10c
" "	2-lb.	"	"	7@ 8c

Ordinary grades not wanted.

Extracted white clover,	"	7@ 8c
" buckwheat,	"	6@6¼c
Beeswax, prime yellow,	"	32@33c

May 20, 1885. McCAUL & HILDRETH BROS.,
34 Hudson Street, corner Duane St., New York.

NEW YORK.—*Honey.*—There is no notable change in the honey market. The demand is light for both comb and extracted, and prices are now ranging very low. We quote:

Fancy white clover,	1-lb.	sections,	per lb.,	14@16c
" " "	2 "	"	"	12@13c
Lower grades,	1 and 2 lb.	"	"	10@14c
Buckwheat,	1 and 2 lb.	"	"	7@ 9c
California comb, fancy white,			"	10@11c
" extracted "	"	in 60-lb. cans;		6½@ 7c

Beeswax.—30@33c, according to quality.
THURBER, WHYLAND & CO.,
May 13, 1885. Reade & Hudson Sts., New York.

CINCINNATI.—*Honey.*—There is no new feature in the market. Our regular customers only are buyers at present. There is almost no outside demand, and low figures are no inducement. We quote extracted honey from 5@8c on arrival, and comb honey from 9@12c.

Beeswax is in very good demand, arrivals are plentiful. We quote 24@28c for good yellow on arrival.
CHAS. F. MUTH,
S. E. Cor. Freeman and Central Avenues,
May 20, 1885. Cincinnati, Ohio.

BOSTON.—*Honey.*—We have not any thing of interest to note about the honey market; prices remain the same, and our stock is light.
May 21, 1885. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

ST. LOUIS.—*Honey.*—Honey is difficult to sell. Extracted Southern, in bbls., held at 4 to 5c. Choice Northern in kegs, 7@8c. Comb honey nominal, entirely neglected.

Beeswax.—No change to note; orders scarce. Quote from 27@30c. W. T. ANDERSON & CO.,
May 21, 1885. 104 N. Third St., St. Louis, Mo.

CHICAGO.—*Honey.*—Comb honey is in light demand at 12@15c for best grades; not much on the market. Extracted dull at 5@7c. *Beeswax*, quiet at 25@27c. R. A. BURNETT,
May 20, 1885. 161 So. Water St., Chicago, Ill.

CLEVELAND.—*Honey.*—There is no change from our last report; sales are very slow, and only the brightest, most attractive lots are moving at 14c for 1-lb., and 12@13c. for 2 lbs. Second qualities stand perfectly still. *Beeswax*, 28@30c.
May 20, 1885. A. C. KENDEL,
115 Ontario St., Cleveland, Ohio.

BEE-KEEPERS,

We are making very nice ONE-PIECE SECTIONS, and are selling them very cheap.

Please send for price list.

J. H. WOODWORTH & CO.,
11d WEST WILLIAMSFIELD, ASHTABULA CO., O.

FRADENBURG'S RABBITS.

I have now 175 ready to fill orders, and shall have more in due season. A. A. FRADENBURG,
Port Washington, O.

FLORIDA.

ORANGE-GROWING, BEE CULTURE, & GARDENING.

FOR SALE,

Near Lane Park, Sumter Co., Fla., on the east side of Lake Harris, near shore, and in the famous "Great Lake Region" of the "Orange Belt," about 10 acres of choice first-class pine land, with portion of rich Hammock, right of way to the lake, and advantages for boating, fishing, bathing, travel, and transport. Soil exceptionally good, and admirably suited for orange-growing, or raising early fruits and vegetables. Excellent bee-pasturage surrounding. Location pleasant, healthy, well protected from frost, near two important towns and R. R. stations, and in desirable and rising neighborhood. Good home market for produce, and first-rate facilities for transportation. An excellent opportunity for advantageously uniting the above three industries. Each should pay well singly, and by combining them, early and good income may be secured before the splendid result gained when the grove is brought into bearing. Title perfect. Price moderate. Fuller particulars and terms from

W. D. CAMPBELL, Tavares, Orange Co., Fla.

BEES BY THE POUND.

24 Colonies to draw from.

1 pound .....$1.00 | 3 pounds for.....$2 50

Nucleus queens cheap. Safe arrival guaranteed. Will exchange for foundation at market prices.
W. R. WHITMAN.
11-12d Nashville, Davidson Co., Tenn.

SAFE Introduction Guaranteed. Untested Italian queens in June, $1.38, by return mail. Terms of introduction, subscribe to conditions in our catalogue, which we send free to all applicants. Send for it. You will learn something new. See ad. in May GLEANINGS. S. A. DYKE & CO., POMEROY, OHIO. 11d

ITALIAN BEES AND QUEENS.

FULL COLONIES, NUCLEI, AND BY THE POUND.

11 **E. A. GASTMAN, Decatur, Ill.**

Look! Look! Look!

PURE ITALIAN BEES AND QUEENS.

	June	July	Aug.
Untested queens $1 25	$1 00	$1 00
Tested " 2 50	2 00	2 00
½ lb. of bees (no queen) 1 25	1 00	1 00

All queens impurely mated, replaced.

CHAS. L. MACKEY,
11tfdb BOX 396. YOUNGSTOWN, MAHONING CO., OHIO.

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ITALIAN QUEENS

No Cyprian or Syrian bees ever introduced in this locality. One queen, in June, $1.25; ½ doz., $6.00. After July 1, ½ doz., $5.00. Send for our 48-page illustrated catalogue, describing every thing needed by bee-keepers. Address

J. B. MASON,
11tfd **Mechanic Falls, Maine.**

FOR SALE.

I want to sell 100 L. frames of comb, 9⅛x17⅝, over one-half worker-comb. $15.00 will buy them.
11tfdb J. W. BRADLEY, COLUMBIA, BOONE CO., MO.

FRANK BOOMHOWER SAYS:

"The 100 hives you made and sent me are first-class in workmanship, and are the most perfect job of the kind I have ever received."

Send for circular. **C. W. CASTELLOW,**
11d **Waterboro, York Co., Me.**